

DRIVE SYSTEM

Lifting the Machine for Service

1. Place two pieces of approximately 2" (5.08cm) thick wood blocks directly behind both tracks (Fig. 1261).



Fig 1261

PICT-4245

2. Back the machine up onto the wood blocks.
3. Place a hydraulic floor jack under the rear frame of the machine (Fig. 1262).



Fig 1262

PICT-4247

4. Raise the rear of the machine, remove the two wood blocks and place a jack stand under each corner of the frame (Fig. 1263).



Fig 1263

PICT-4248

5. Raise the hydraulic floor jack approximately 15" (38.10cm) and position it at the front of the machine (Fig. 1264).



Fig 1264

PICT-4249

DRIVE SYSTEM

6. Start the machine and raise the loader arm enough to clear the hydraulic floor jack. Place the floor jack directly below the mount plate and lower the loader arm onto the hydraulic floor jack. Continue lowering the loader arm to raise the tracks off the ground (Fig. 1265).



Fig 1265

PICT-4250

8. Lower the hydraulic floor jack so the machine rests on the jack stands. Lower the loader arms to the resting position (Fig. 1267).



Fig 1267

PICT-4253

7. Place two jack stands under the front frame (Fig. 1266).



Fig 1266

PICT-4251

9. Make sure the machine is securely supported by the jack stands.

Track Guide Alignment

Alignment Tool (Toro p/n: 110-0069) (Fig. 1268):



Fig 1268

DSC-0624

- Wide track models only: Slide a washer/tensioner wheel assembly onto the tensioner arm wheel shaft. Install a nut to secure (Fig. 1270).



Fig 1270

PICT-4483

- Remove the track. Refer to "Wide Track Removal" on page 7-68 or "Narrow Track Removal" on page 7-72.
- Loosen the 4 bolts securing the track guide to the mainframe (Fig. 1269).

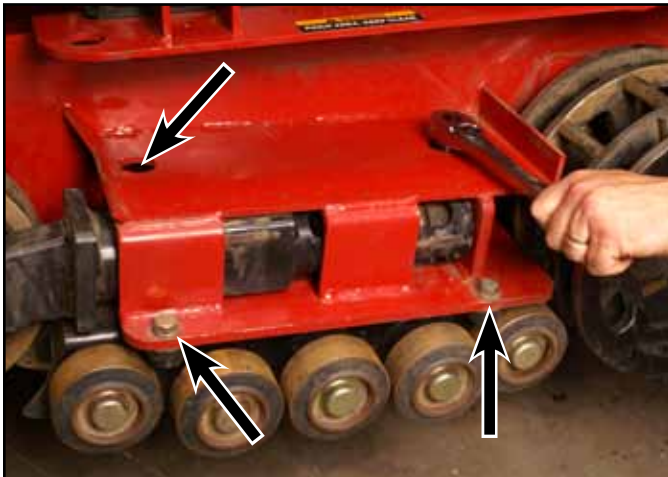


Fig 1269

PICT-4482

- Insert the notched end of the alignment tool into the drive wheel spacer (Fig. 1271).



Fig 1271

PICT-4485

DRIVE SYSTEM

5. Secure the notched end with the pin (Fig. 1272).



Fig 1272

PICT-4484

7. Torque the 4 track guide mounting bolts to 75 ft-lbs. (102 Nm) (Fig. 1274).



Fig 1274

PICT-4493

6. Rotate the tool and move the track guide as necessary until the tool fits into the track guide channel. Secure the end of the alignment tool with a strap (Fig. 1273).



Fig 1273

PICT-4488a

8. Remove the alignment tool.
9. Wide track models only: Remove the nut and washer/tensioner wheel assembly from the tensioner arm wheel shaft (Fig. 1275).



Fig 1275

PICT-4483

10. Install the track. Refer to "Wide Track Installation" on page 7-70, or "Narrow Track Installation" on page 7-73.

Belt Replacement

Belt Removal

1. Position the traction unit on a flat surface.
2. Remove the ignition key.
3. Apply the parking brake.
4. Raise the hood.
5. Remove the hairpin cotter from the hood prop rod (Fig. 1276).
6. Support the hood and remove the prop rod (Fig. 1277).



Fig 1276

Belt 001



Fig 1277

Belt 003

7. Using a 1/2" wrench, remove the 2 lower heat shield screws (Fig. 1278).



Fig 1278

Belt 002

DRIVE SYSTEM

8. Using a 3/16" Allen wrench, remove the 2 upper heat shield screws (Fig. 1279).



Fig 1279

Belt 004

10. Using a spring tool, remove the idler spring from its post (Fig. 1281).



Fig 1281

Belt 007

9. Remove the heat shield (Fig. 1280).



Fig 1280

Belt 005

11. Remove the belt from the right and left hydraulic traction pump pulleys (Fig. 1282).



Fig 1282

Belt 008

DRIVE SYSTEM

12. Remove the rear access cover (Fig. 1283).



Fig 1283

Belt 006

14. Remove the gas tank hold down bracket (Fig. 1285).



Fig 1285

Belt 010

13. Using a 1/2" wrench and 1/2" socket combination, remove the gas tank hold down bracket bolt and nut (Fig. 1284).



Fig 1284

Belt 009

15. Using a 5/8" socket combination, remove the 2 hydraulic pump mount plate bolts (Fig. 1286).

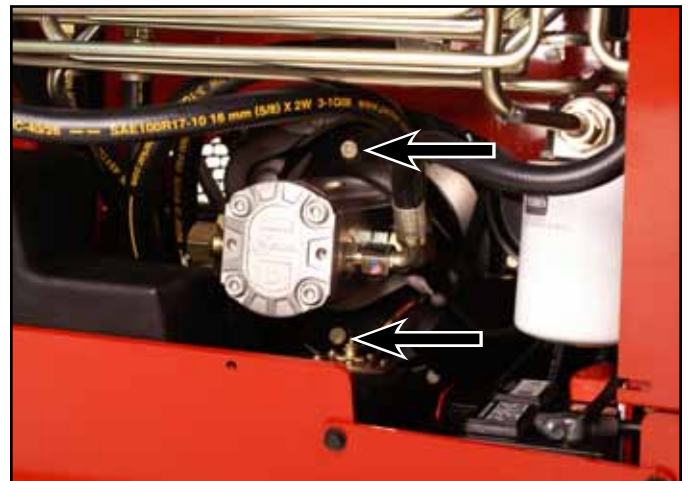


Fig 1286

Belt 013

DRIVE SYSTEM

16. Rotate the hydraulic pump clockwise and pull the hydraulic pump outward to separate the coupling sleeve and the hub sleeve. This will permit belt removal (Fig. 1287).



Fig 1287

Belt 012

Belt Installation

1. Pull the hydraulic pump outward to create enough clearance between the coupling sleeve and the hub sleeve to allow for belt installation (Fig. 1289).



Fig 1289

Belt 015

17. Remove the belt (Fig. 1288).



Fig 1288

Belt 015

2. Install the belt onto the engine pulley and the right and left hydraulic traction pump pulleys (Fig. 1290).



Fig 1290

Belt 014

DRIVE SYSTEM

- Using a spring tool, install the idler spring onto its post (Fig. 1291).



Fig 1291

Belt 007

- Rotate and push the hydraulic pump by hand until the coupling sleeve properly meshes with the hub sleeve recessed in the engine pulley (Fig. 1293).

Note: Do not use the hydraulic pump mount plate bolts to draw the coupling sleeve into the hub sleeve. Doing so could result in the snap ring sliding out of its groove on the hub coupling. This will result in the loss of hydraulics.



Fig 1293

Belt 012

Belt Routing (rear view) (Fig. 1292):

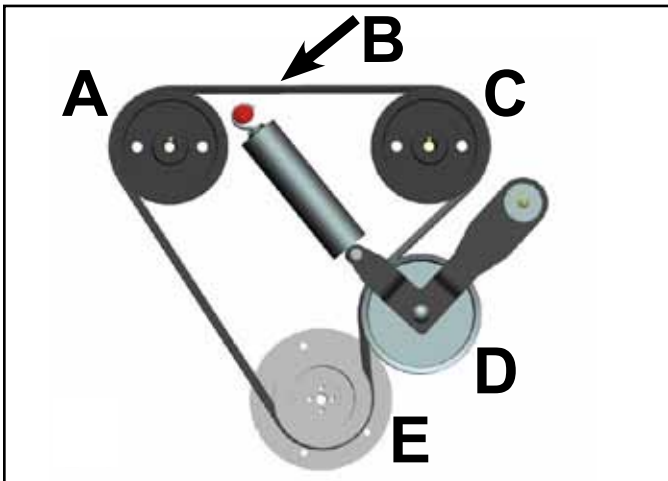


Fig 1292

TX525 belt routing

- | | |
|-------------------|------------------|
| A. LH pump pulley | D. Idler pulley |
| B. Drive belt | E. Engine pulley |
| C. RH pump pulley | |

DRIVE SYSTEM

5. Using a 5/8" socket, install and torque the 2 hydraulic pump mount plate bolts to 50 ft-lbs. (67.8 Nm) (Fig. 1294).



Fig 1294

Belt 018

7. Install the rear access cover (Fig. 1296).



Fig 1296

Belt 006

6. Using a 1/2" wrench and socket, install the gas tank hold down bracket (Fig. 1295).



Fig 1295

Belt 009

8. Position the heat shield (Fig. 1297).



Fig 1297

Belt 005

DRIVE SYSTEM

9. Using a 3/16" Allen wrench, install and tighten the 2 upper heat shield screws (Fig. 1298).



Fig 1298

Belt 004

11. Support the hood and install the prop rod (Fig. 1300).



Fig 1300

Belt 003

10. Using a 1/2" wrench, install and tighten the 2 lower heat shield screws (Fig. 1299).



Fig 1299

Belt 002

12. Install the hairpin cotter (Fig. 1301).



Fig 1301

Belt 001

DRIVE SYSTEM

Idler Arm Replacement

Idler Arm Removal

1. Shut engine off, apply parking brake, and remove ignition key.
2. Lift the engine hood assembly.
3. Remove the hairpin cotter from the prop rod (Fig. 1302).



Fig 1302

Belt 001

4. Remove the prop rod (Fig. 1303).



Fig 1303

Belt 003

5. Using a 3/16" Allen wrench, remove the top 2 screws. Using a 1/2" socket, remove the bottom 2 screws securing the heat shield to the tower (Fig. 1304).

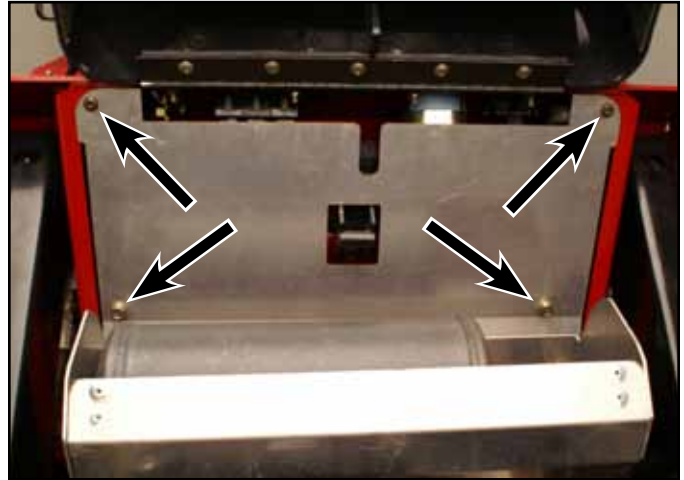


Fig 1304

PICT-5258

6. Remove the heat shield (Fig. 1305).



Fig 1305

Belt 005

DRIVE SYSTEM

7. Remove the rear access panel (Fig. 1306).



Fig 1306

PICT-4505a

9. Using a spring tool, remove the idler spring from its post (Fig. 1308).



Fig 1308

PICT-5360

8. Using a 3/8" socket, remove the 3 screws securing the right hand support panel to the tower assembly. Remove the right hand support panel (Fig. 1307).

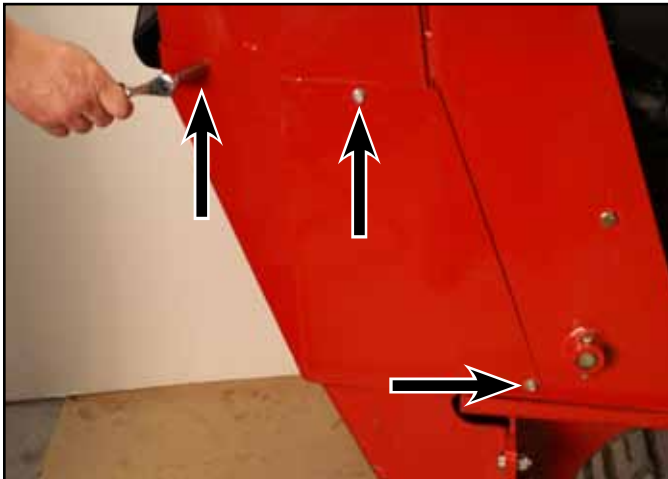


Fig 1307

PICT-4504

10. Using a 1/2" socket and wrench, remove the nut securing the idler arm assembly to the tower (Fig. 1309).

Note: The nut is located on the back side of the tower behind the loader valve.

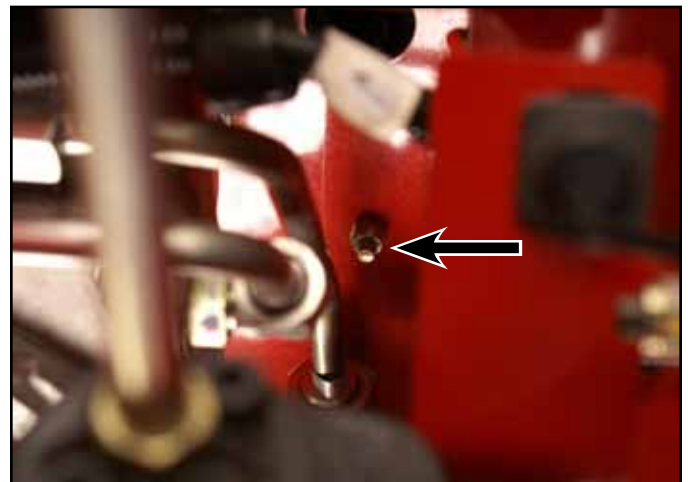


Fig 1309

PICT-5370

DRIVE SYSTEM

11. Remove the idler arm assembly from the unit (Fig. 1310).



Fig 1310

PICT-5371

13. Inspect the idler pulley bearing and the two flange bushings. Replace if worn or damaged (Fig. 1312).

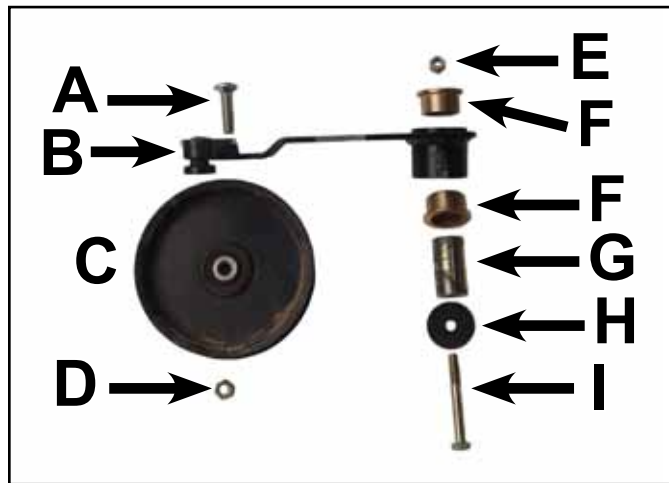


Fig 1312

CLR DSC-3321

12. Remove the spring and rubber spring retainer from the idler assembly and slide the rubber spring retainer off the spring (Fig. 1311).



Fig 1311

PICT-5374a

- | | |
|-----------------------|------------------------|
| A. Carriage bolt | F. Flange bushings (2) |
| B. Idler arm assembly | G. Mounting spacer |
| C. Pulley | H. Washer |
| D. Nut | I. Bolt |
| E. Nut | |

DRIVE SYSTEM

Idler Arm Assembly Installation

1. Position the idler arm assembly in the unit so the drive belt is routed between the pulley and the idler arm spring post (Fig. 1313).



Fig 1313

PICT-5373

2. Slide the idler arm down and position it against the tower, inserting the idler mounting bolt through the mounting hole in the tower. Using a 1/2" socket and wrench, install a nut onto the idler assembly bolt securing it to the tower. Ensure the idler arm rotates freely (Fig. 1314).

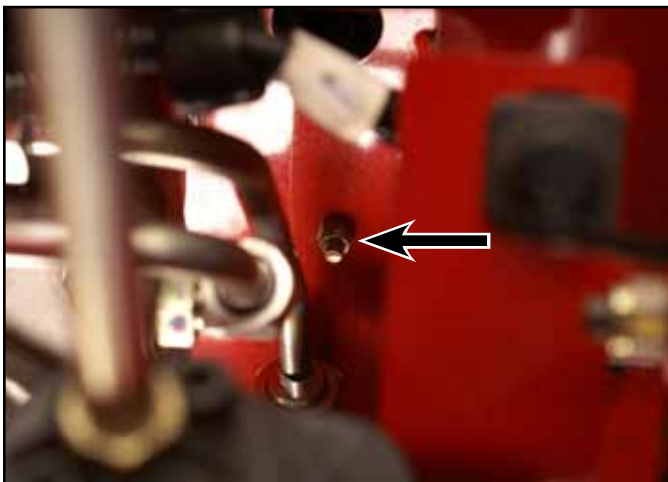


Fig 1314

PICT-5370

3. Slide a spring tool through the rubber spring retainer. Hook the idler spring to the spring tool (Fig. 1315).



Fig 1315

PICT-5376a

4. Pull the idler spring approximately half way into the rubber spring retainer (Fig. 1316).



Fig 1316

PICT-5377a

DRIVE SYSTEM

5. Hook the idler spring to the idler arm spring post (Fig. 1317).



Fig 1317

PICT-5378

8. Position the right hand support panel to the tower. Using a 3/8" socket, install 3 screws to secure the right hand support panel to the tower assembly (Fig. 1319).

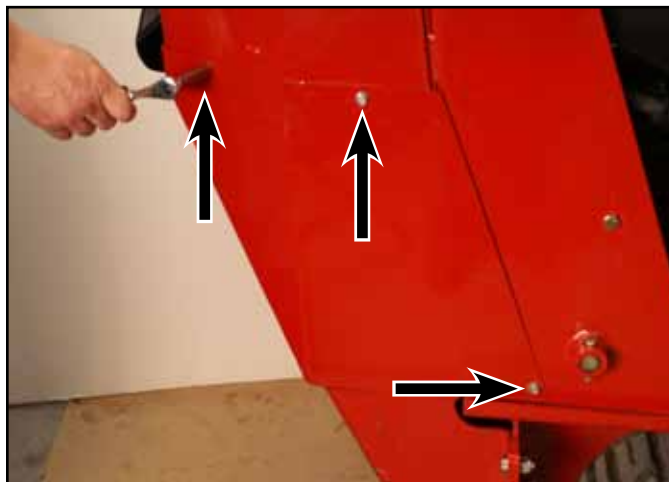


Fig 1319

PICT-4504

6. Align the belt with the idler pulley.
7. Using a spring tool, install the idler spring onto its post (Fig. 1318).



Fig 1318

PICT-5379

9. Install the rear access panel (Fig. 1320).



Fig 1320

PICT-4505a

DRIVE SYSTEM

10. Position the heat shield (Fig. 1321).



Fig 1321

Belt 005

12. Install the prop rod (Fig. 1323).



Fig 1323

Belt 003

11. Using a 3/16" Allen wrench, install the top 2 screws. Using a 1/2" socket, install the bottom 2 screws securing the heat shield to the tower (Fig. 1322).

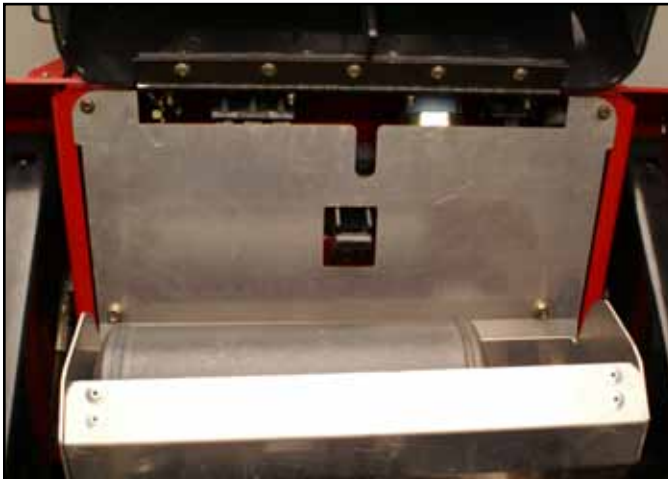


Fig 1322

PICT-5258

13. Install a hairpin cotter into the prop rod (Fig. 1324).



Fig 1324

Belt 001

DRIVE SYSTEM

Right Hydrostatic Pump Replacement

Right Hydrostatic Pump Removal

Note: Cleanliness is a key factor in a successful repair of any valve system. Thoroughly clean all exposed surfaces prior to any type of maintenance. Cleaning all parts by using a solvent wash and air drying is usually adequate. As with any precision equipment, all parts must be kept free of foreign material and chemicals. Protect all exposed sealing areas and open cavities from damage and foreign material.

Upon removal, all seals, o-rings, and gaskets should be replaced. During installation, lightly lubricate all seals, o-rings, and gaskets with clean petroleum jelly prior to assembly.

Protect the inner diameter of seals and o-rings from damage during assembly by covering the shaft machined features with plastic wrap or equivalent.

1. Raise the machine and set it on jack stands. Refer to "Lifting the Machine for Service" on page 7-1.
2. Remove the rear access panel (Fig. 1325).



Fig 1325

PICT-4505

3. Using a 3/8" socket, remove the 6 screws that secure the left and right rear cover support panels to the tower assembly (3 screws per panel). Remove the panels (Fig. 1326).

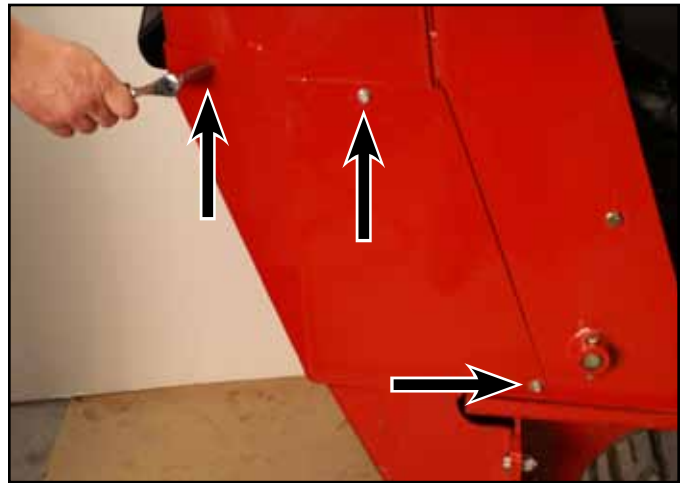


Fig 1326

PICT-4504

4. Using 3/4" and 1/2" sockets, remove the 7 bolts and nuts securing the rear frame cover to the frame and fuel tank bracket. Remove the rear frame cover (Fig. 1327).

Note: The rear of the machine may have to be lifted to reposition the jack stands so that the rear frame cover can be removed.

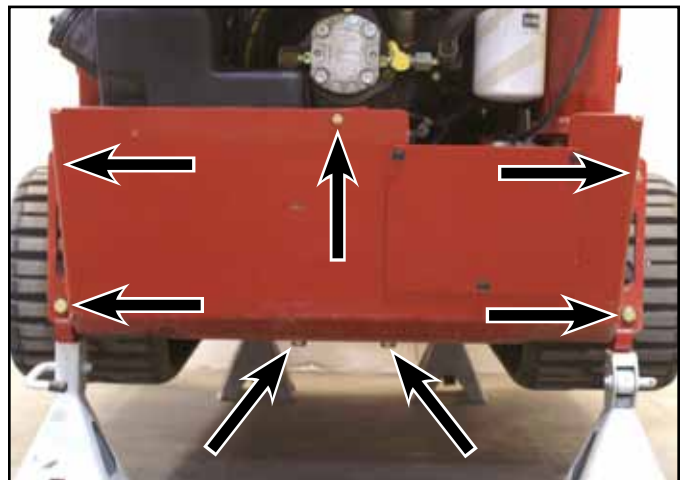


Fig 1327

PICT-4259

DRIVE SYSTEM

5. Remove the fuel tank bracket (Fig. 1328).



Fig 1328

PICT-5626

6. Disconnect the two wires (black and orange) from the fuel sending unit located on the top of the fuel tank (Fig. 1329).



Fig 1329

PICT-4262a

7. Mark the suction fuel line and tank fitting with an "S" and the return fuel line and tank fitting with an "R" (Fig. 1330):
S - Fuel suction line
R - Fuel return line



Fig 1330

PICT-4263

8. Slide the 2 fuel hose clamps down the fuel lines away from the fuel tank fittings (Fig. 1331).



Fig 1331

PICT-4264

DRIVE SYSTEM

9. Slide the 2 fuel lines off the fuel tank fittings. Remove the fuel tank (Fig. 1332).



Fig 1332

PICT-4265

11. Remove the left hand panel from the control panel assembly (Fig. 1334).



Fig 1334

PICT-4601

10. Using a 3/8" socket, remove the 4 self-tapping screws securing the left hand panel to the control panel assembly (Fig. 1333).



Fig 1333

PICT-4600

12. Using a 3/8" socket, remove the 3 self-tapping screws that secure the right panel to the control panel assembly. Using a 3/8" socket and a 7/16" socket, remove the bolt and nut securing the lower left corner of the right panel to the control panel assembly (Fig. 1335).

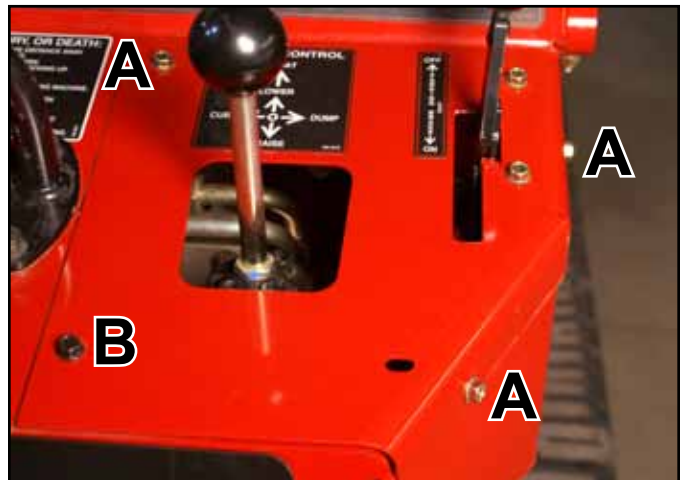


Fig 1335

PICT-4341

- A. Self-tapping screw (3) B. Bolt and nut

DRIVE SYSTEM

13. Remove the right hand panel from the control panel assembly (Fig. 1336).



Fig 1336

PICT-4269

14. Mark the hydrostatic pump fittings and lines as follows:

- A. Inlet line from the left hand hydrostatic pump (Fig. 0000).
- B. Inlet line from the hydraulic oil filter (Fig. 1337).



Fig 1337

PICT-4637

- C. Case drain line (Fig. 1338).



Fig 1338

PICT-4639a

- D. Right hand wheel motor port (Fig. 1339).

- E. Left hand wheel motor port (Fig. 1339).



Fig 1339

PICT-4640

DRIVE SYSTEM

15. Mark the hydraulic pump wheel motor hoses and fittings with the letters D and E (Fig. 1340).



Fig 1340

PICT-4747

17. Mark the tandem pump, T-fitting and hose with the letter "G" (Fig. 1342).



Fig 1342

PICT-4737

16. Mark the tandem pump, hose and fitting running to the 2 spool valve with a letter "F" (Fig. 1341).

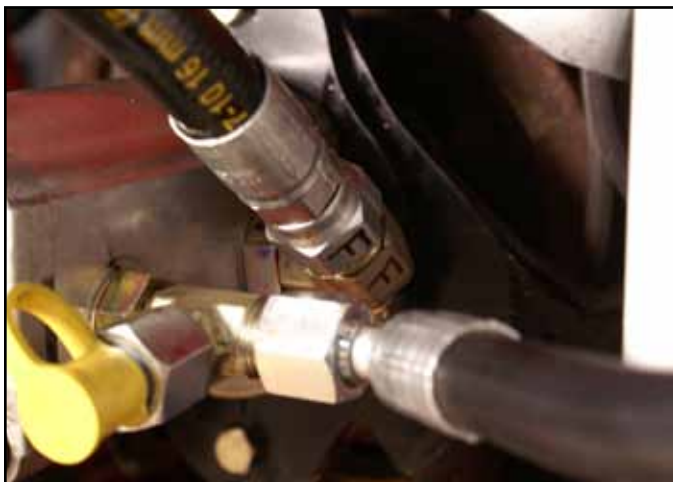


Fig 1341

PICT-4736

18. Mark the tandem pump test port fitting with the letter "H" (Fig. 1343).



Fig 1343

PICT-4740a

DRIVE SYSTEM

19. Using a 15/16" wrench, disconnect the right hand hydrostatic pump lines (just marked) as follows:

A. Inlet line from the hydraulic oil filter (Fig. 1344).



Fig 1344

PICT-4636

B. Inlet line to the left hand hydrostatic pump (Fig. 1345).



Fig 1345

PICT-4641

C. Case drain line (Fig. 1346).



Fig 1346

PICT-4643a

D. Hydraulic hose running from the "D" port on the right hand hydrostatic pump to the upper fitting on the left wheel motor (Fig. 1347).



Fig 1347

PICT-4644

DRIVE SYSTEM

- E. Hydraulic hose running from the “E” port on the hydrostatic pump to the lower fitting on the left wheel motor (Fig. 1348).



Fig 1348

PICT-4645

21. Using a 15/16” wrench, remove the wheel motor hose fittings marked “E” from the right hand hydraulic pump (Fig. 1350).

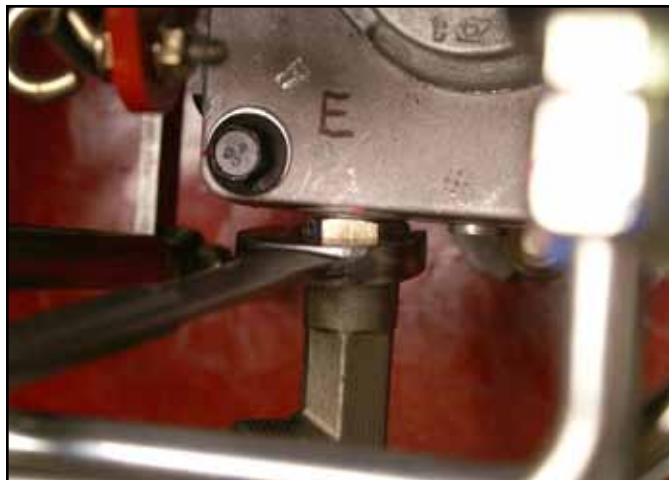


Fig 1350

PICT-4751a

20. Using a 15/16” wrench, remove the wheel motor hose fittings marked “D” from the right hand hydraulic pump (Fig. 1349).

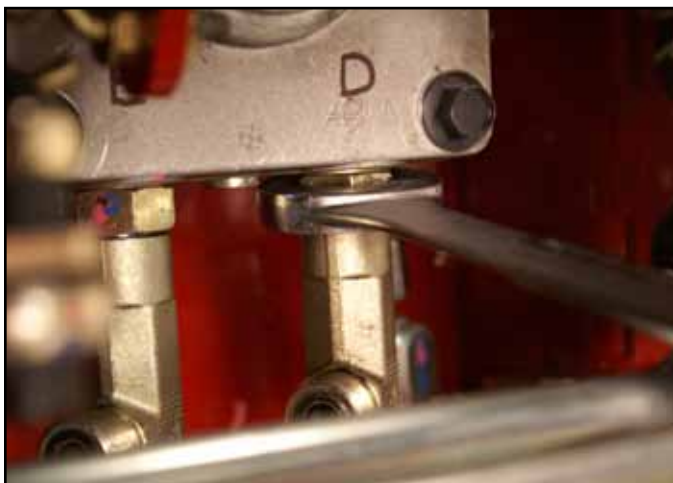


Fig 1349

PICT-4750

22. Using a 1-1/8” wrench, remove the hydraulic hose marked “F” from the tandem pump fitting (Fig. 1351).



Fig 1351

PICT-4734

DRIVE SYSTEM

23. Using a 15/16" wrench, remove the hose from the T-fitting marked "G" on the tandem pump (Fig. 1352).



Fig 1352

PICT-4738a

25. Remove the T-fitting marked "G" from the tandem pump (Fig. 1354).

Note: Cap all hydraulic lines and fittings to prevent debris from entering system.



Fig 1354

PICT-4742a

24. Using a 15/16" wrench, remove the test port fitting "H" from the T-fitting marked "G" (Fig. 1353).



Fig 1353

PICT-4741a

26. Using a 1/2" socket and wrench, remove the nut and bolt securing the steering linkage to the right hand pump control arm (Fig. 1355).



Fig 1355

PICT-4752

DRIVE SYSTEM

27. Raise the hood.

28. Remove the hairpin cotter from the hood prop rod (Fig. 1356).



Fig 1356

Belt 001

29. Support the hood and remove the prop rod (Fig. 1357).



Fig 1357

Belt 003

30. Using a 1/2" wrench, remove the 2 lower heat shield screws (Fig. 1358).



Fig 1358

Belt 002

31. Using a 3/16" Allen wrench, remove the 2 upper heat shield screws (Fig. 1359).



Fig 1359

Belt 004

DRIVE SYSTEM

32. Remove the heat shield (Fig. 1360).



Fig 1360

Belt 005

34. Remove the belt from the right and left hydraulic traction pump pulleys (Fig. 1362).



Fig 1362

Belt 008

33. Using a spring tool, remove the idler spring from its post (Fig. 1361).



Fig 1361

Belt 007

35. Secure the pulley. Using a 5/8" socket, remove the center nut and washer retaining the pulley to the right hand hydrostatic pump shaft (Fig. 1363).



Fig 1363

PICT-4647

DRIVE SYSTEM

36. Install a special pulley puller (Toro p/n: 112-2557) onto the right hand hydrostatic pulley (Fig. 1364).



Fig 1364

PICT-4593a

38. Remove the key from the hydrostatic pump shaft keyway (Fig. 1366).



Fig 1366

PICT-4650

37. Remove the right hand pulley from the hydrostatic pump shaft (Fig. 1365).

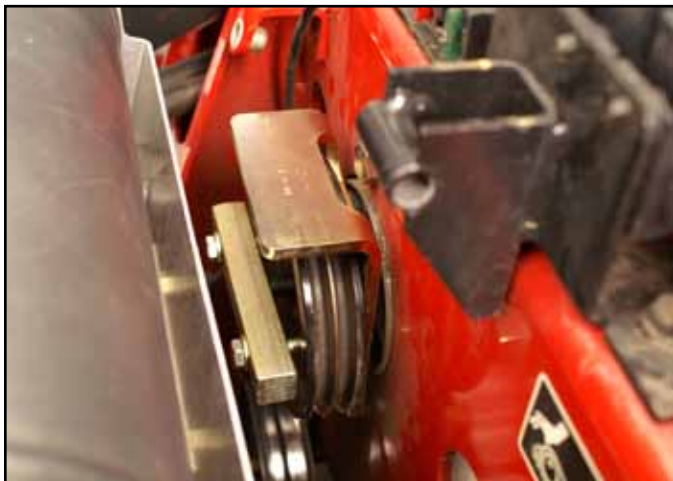


Fig 1365

PICT-4648

39. Using a 3/4" socket and wrench, remove the top bolt and nut securing the right hand hydrostatic pump to the tower frame. Loosen the lower nut and bolt securing the right hand hydrostatic pump to the tower frame (Fig. 1367).



Fig 1367

PICT-8900

DRIVE SYSTEM

40. Remove the right hand hydrostatic pump from the tower frame (Fig. 1368).



Fig 1368

PICT-4753

41. If replacing the pump, transfer all markings and fittings to the new pump (Fig. 1369).



Fig 1369

PICT-4754a

42. If repairing/rebuilding the pump, refer to the Hydro-Gear BDP-10A/16A/21L Hydrostatic Pumps Service and Repair Manual (Toro Form No. 492-4789).

Right Hydrostatic Pump Installation

1. With the lower pump mounting bolt and nut loosely installed in the tower frame, position the right hand hydrostatic pump so the pump shaft is inserted through the frame (Fig. 1370).



Fig 1370

PICT-4753

2. Using a 3/4" socket and wrench, install the top bolt and nut. Tighten the lower bolt and nut securing the right hand hydrostatic pump to the tower frame (Fig. 1371).



Fig 1371

PICT-8900

DRIVE SYSTEM

3. Install a key into the hydrostatic pump shaft keyway (Fig. 1372).



Fig 1372

PICT-4650

4. Slide the pulley onto the right hand hydrostatic pump shaft with the thicker flange side facing toward the pump (Fig. 1374).



Fig 1374

PICT-4758

Note: The pulley has a tapered through hole and a thicker flange on one side than the other (Fig. 1373).



Fig 1373

PICT-4662a

5. Slide a washer onto the pump shaft (Fig. 1375).



Fig 1375

PICT-4760

DRIVE SYSTEM

6. Install a nut to secure the pulley to the right hand hydrostatic pump shaft (Fig. 1376).



Fig 1376

PICT-4761

7. Torque the nut to 260 ± 40 in-lbs. (29.38 ± 4.5 Nm) (Fig. 1377).



Fig 1377

PICT-4763

8. Route the belt around the engine pulley and the right and left hydrostatic pump pulleys (rear view) (Fig. 1378).

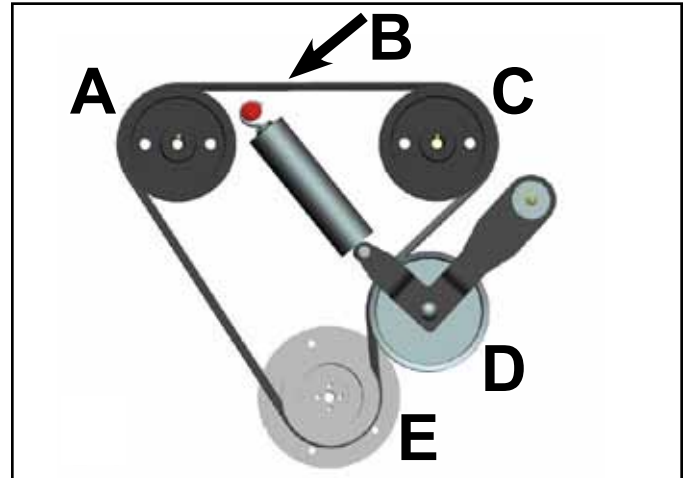


Fig 1378

TX525 belt routing

- | | |
|-------------------|------------------|
| A. LH pump pulley | D. Idler pulley |
| B. Drive belt | E. Engine pulley |
| C. RH pump pulley | |

9. Install the idler spring onto its post (Fig. 1379).



Fig 1379

Belt 007

DRIVE SYSTEM

10. Position the heat shield (Fig. 1380).



Fig 1380

Belt 005

12. Using a 1/2" wrench, install the 2 lower heat shield screws (Fig. 1382).



Fig 1382

Belt 002

11. Using a 3/16" Allen wrench, install the 2 upper heat shield screws (Fig. 1381).



Fig 1381

Belt 004

13. Support the hood and install the prop rod (Fig. 1383).



Fig 1383

Belt 003

DRIVE SYSTEM

14. Install the hairpin cotter (Fig. 1384).



Fig 1384

Belt 001

17. Install the T-fitting marked "G" into the tandem pump (Fig. 1386).



Fig 1386

PICT-4742a

15. Lower the hood.

16. Using a 1/2" socket and wrench, install the nut and bolt securing the steering linkage to the right hand pump control arm (Fig. 1385).



Fig 1385

PICT-4752

18. Using a 15/16" wrench, install the test port fitting "H" onto the T-fitting marked "G" (Fig. 1387).



Fig 1387

PICT-4741a

DRIVE SYSTEM

19. Using a 15/16" wrench, install the hose marked "G" onto the T-fitting marked "G" on the tandem pump (Fig. 1388).



Fig 1388

PICT-4738a

21. Loosely install the wheel motor hose fittings marked "D" and "E" into the right hand hydraulic pump ports marked "D" and "E" so they are positioned at approximately 8:00 (D) and 9:00 (E) clock positions (Fig. 1390).

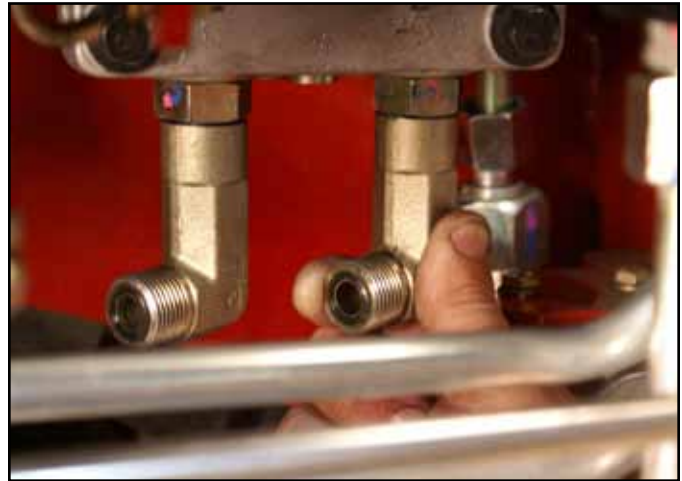


Fig 1390

PICT-4755

20. Using a 1-1/8" wrench, install the hydraulic hose marked "F" onto the tandem pump fitting (Fig. 1389).



Fig 1389

PICT-4734

22. Using a 15/16" wrench, connect the right hand hydrostatic pump lines as follows:
E. Wheel motor hose marked "E" to the fitting marked "E" (Fig. 1391).



Fig 1391

PICT-4645

DRIVE SYSTEM

- D. Wheel motor hose marked "D" to the fitting marked "D" (Fig. 1392).



Fig 1392

PICT-4644

- B. Inlet line from the left hand hydrostatic pump marked "B" to the fitting marked "B" (Fig. 1394).



Fig 1394

PICT-4641

- C. Case drain line marked "C" to the fitting marked "C" (Fig. 1393).



Fig 1393

PICT-4643a

- A. Inlet line from the hydraulic oil filter marked "A" to the fitting marked "A" (Fig. 1395).



Fig 1395

PICT-4636

DRIVE SYSTEM

23. With the fitting secured, tighten the pump fitting nuts on the fittings marked "D" and "E" to the hydraulic pump (Fig. 1396).

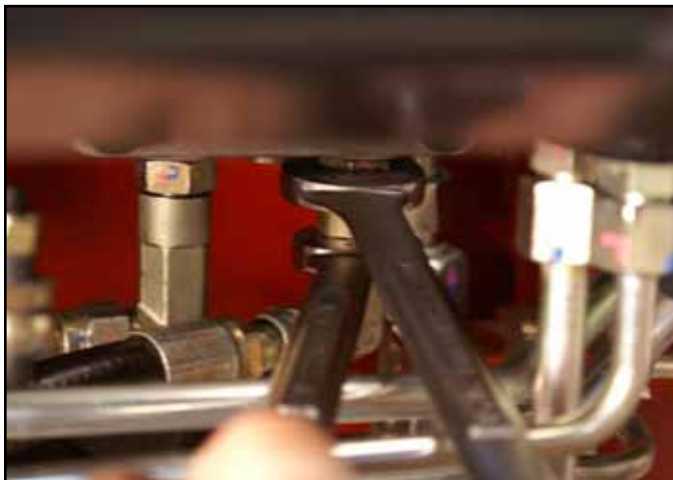


Fig 1396

PICT-4756

25. Position the left hand panel onto the control panel assembly (Fig. 1398).



Fig 1398

PICT-4601

24. Using a 3/8" socket, install 3 self-tapping screws that secure the right panel to the control panel assembly. Using a 3/8" socket and a 7/16" socket, install a bolt and nut securing the lower left corner of the right panel to the control panel assembly (Fig. 1397).

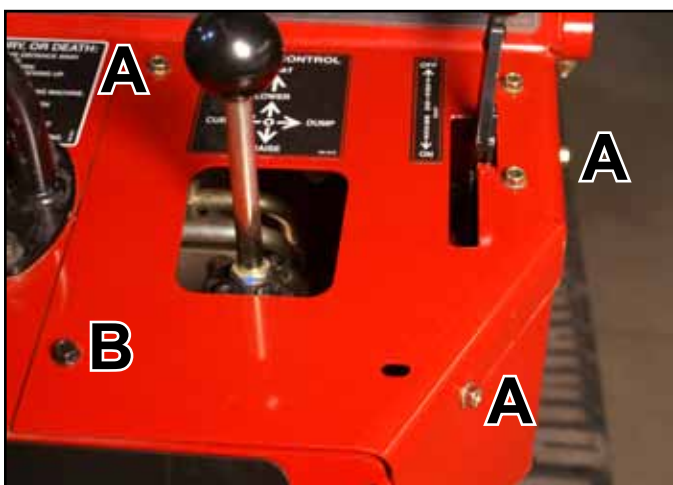


Fig 1397

PICT-4341

26. Using a 3/8" socket, install 4 self-tapping screws securing the left hand panel to the control panel assembly (Fig. 1399).



Fig 1399

PICT-4600

A. Self-tapping screw (3) B. Bolt and nut

DRIVE SYSTEM

27. Slide the 2 fuel lines onto the fuel tank fittings. Note the location markings (Fig. 1400).
S - Fuel suction line
R - Fuel return line

Note: Before installing the fuel tank in the unit, disengage the park brake and start the unit. Refer to “Purging Air Procedure”, page 9-19, and check for any leaks in the hydraulic fittings and hydraulic hoses.



Fig 1400

PICT-4265

28. Position the 2 fuel hose clamps to secure the fuel lines to the fuel tank fittings (Fig. 1401).



Fig 1401

PICT-4264

29. Position the fuel tank into the rear end of the frame. Connect the two wires (black and orange) to the fuel sending unit located on the top of the fuel tank (Fig. 1402).

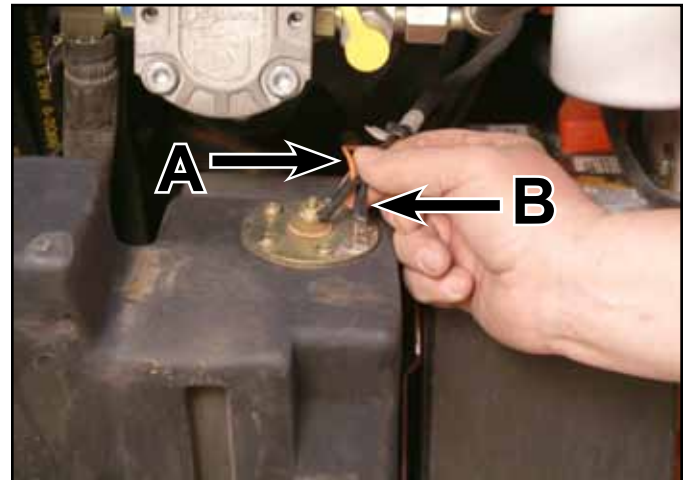


Fig 1402

PICT-4262a

- A. Center terminal (orange wire)
B. Outside terminal (black wire)

30. Position the fuel tank bracket onto the fuel tank (Fig. 1403).



Fig 1403

PICT-5626

DRIVE SYSTEM

31. Position the rear frame cover to the rear end of the frame. Using 3/4" and 1/2" sockets, install 7 bolts and nuts to secure the rear frame cover to the frame and fuel tank bracket (Fig. 1404).

Note: The rear of the machine may have to be lifted to reposition the jack stands so that the rear frame cover can be installed.

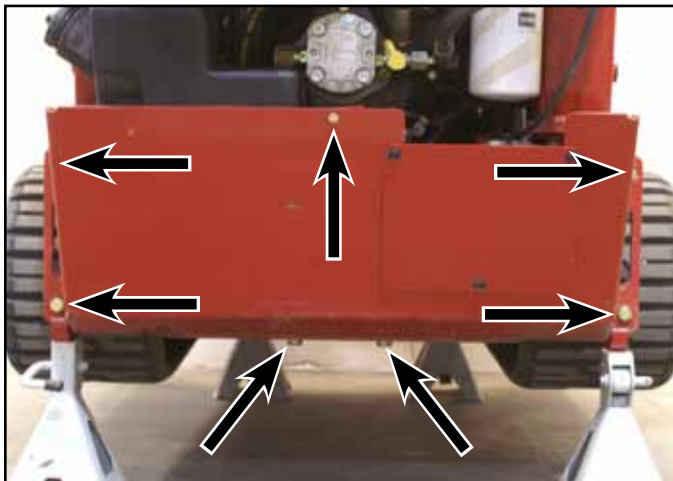


Fig 1404

PICT-4259

32. Position the left hand rear cover support panel to the tower. Using a 3/8" socket, install 3 screws to secure the left rear cover support panel to the tower assembly. Repeat to install right hand rear cover support panel (Fig. 1405).



Fig 1405

PICT-4256

33. Install the rear access panel (Fig. 1406).



Fig 1406

PICT-4505

34. Lower the machine.

Left Hydrostatic Pump Replacement

Left Hydrostatic Pump Removal

1. Raise the machine and set it on jack stands. Refer to "Lifting the Machine for Service" on page 7-1.
2. Remove the rear access panel (Fig. 1407).



Fig 1407

PICT-4505

3. Using a 3/8" socket, remove the 6 screws that secure the left and right rear cover support panels to the tower assembly (3 screws per panel). Remove the panels (Fig. 1408).

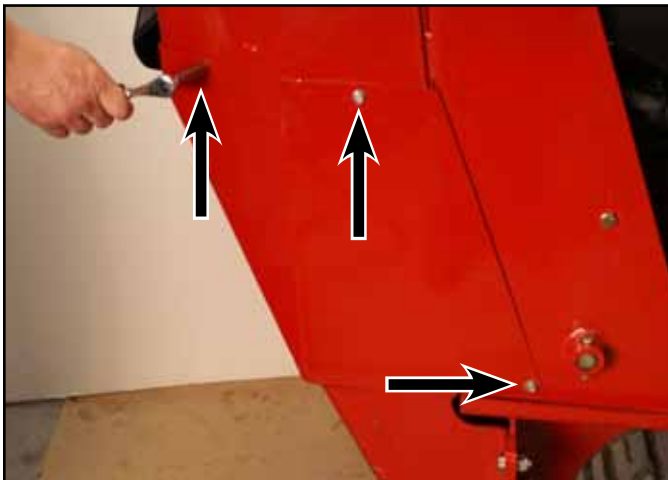


Fig 1408

PICT-4504

4. Using 3/4" and 1/2" sockets, remove the 7 bolts and nuts securing the rear frame cover to the frame. Remove the rear frame cover (Fig. 1409).

Note: The rear of the machine may have to be lifted to reposition the jack stands so that the rear frame cover can be removed.

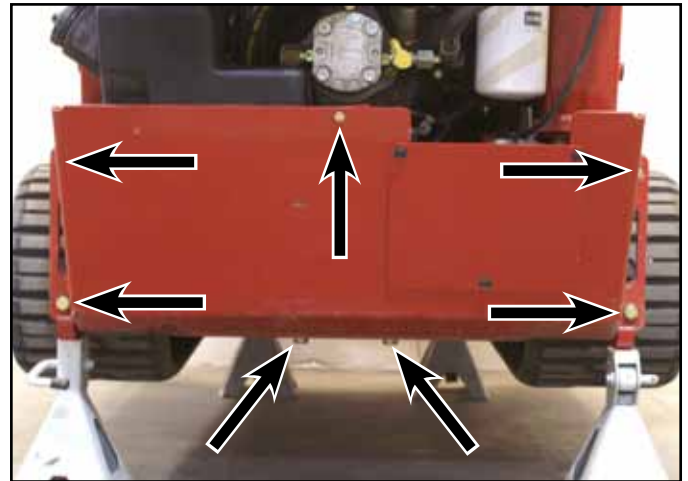


Fig 1409

PICT-4259

5. Remove the fuel tank bracket (Fig. 1410).



Fig 1410

PICT-5626

DRIVE SYSTEM

6. Disconnect the two wires (black and orange) from the fuel sending unit located on the top of the fuel tank (Fig. 1411).



Fig 1411

PICT-4262a

8. Slide the 2 fuel hose clamps down the fuel lines away from the fuel tank fittings (Fig. 1413).



Fig 1413

PICT-4264

7. Mark the suction fuel line and tank fitting with an "S" and the return fuel line and tank fitting with an "R" (Fig. 1412):
S - Fuel suction line
R - Fuel return line



Fig 1412

PICT-4263

9. Slide the 2 fuel lines off the fuel tank fittings. Remove the fuel tank (Fig. 1414).



Fig 1414

PICT-4265

DRIVE SYSTEM

10. Using a 3/8" socket, remove the 4 self-tapping screws securing the left hand panel to the control panel assembly (Fig. 1415).



Fig 1415

PICT-4600

12. Mark the hydrostatic pump fittings and lines as follows:
A. Hydraulic oil inlet from the filter (Fig. 1417).



Fig 1417

PICT-4603

11. Remove the left hand panel from the control panel assembly (Fig. 1416).



Fig 1416

PICT-4601

- B. Right pump case drain line and,
C. Case drain line returning to the hydraulic oil tank (Fig. 1418).



Fig 1418

PICT-4606

DRIVE SYSTEM

- D. Hydraulic hose running to the lower port on the right hand wheel motor and,
- E. Hydraulic hose running to the upper port on the right hand wheel motor (Fig. 1419).



Fig 1419

PICT-4608

- F. Hydraulic hose running to the lower port on the left hand wheel motor and
- G. Hydraulic hose running to the upper port on the left hand wheel motor (Fig. 1420).



Fig 1420

PICT-4609

- 13. Using a 15/16" wrench, disconnect the left hand hydraulic pump lines (just marked) as follows:
 - A. Hydraulic oil inlet from the filter (Fig. 1421).



Fig 1421

PICT-4612

- B. Right pump case drain line (Fig. 1422).

Note: A 7/8" wrench may be used to hold the fitting while loosening the hydraulic line.



Fig 1422

PICT-4613

DRIVE SYSTEM

- C. Case drain line returning to the hydraulic oil tank (Fig. 1423).



Fig 1423

PICT-4614

- E. Hydraulic hose running from the “E” port on the hydrostatic pump to the lower fitting on the right wheel motor (Fig. 1425).

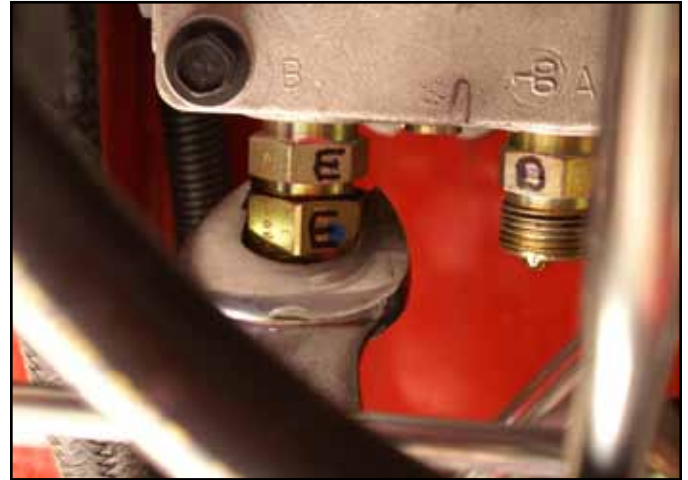


Fig 1425

PICT-4616

14. Using a 1-1/8” wrench, disconnect the remaining left hand hydrostatic pump lines (just marked) as follows:

- D. Hydraulic hose running from the “D” port on the pump to the upper fitting on the right wheel motor (Fig. 1424).

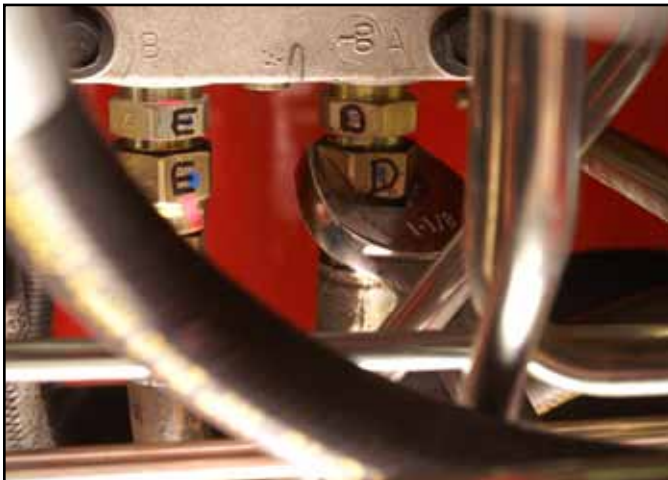


Fig 1424

PICT-4615

- F. Hydraulic hose running to the lower port on the left hand wheel motor (Fig. 1426).



Fig 1426

PICT-4621

DRIVE SYSTEM

- G. Hydraulic hose running to the upper port on the left hand wheel motor (Fig. 1427).

Note: Cap all hydraulic lines and fittings to prevent debris from entering system.



Fig 1427

PICT-4623

16. Raise the hood.

17. Remove the hairpin cotter from the hood prop rod (Fig. 1429).



Fig 1429

Belt 001

15. Remove the nut and bolt securing the drive linkage to the left hand hydrostatic pump (Fig. 1428).

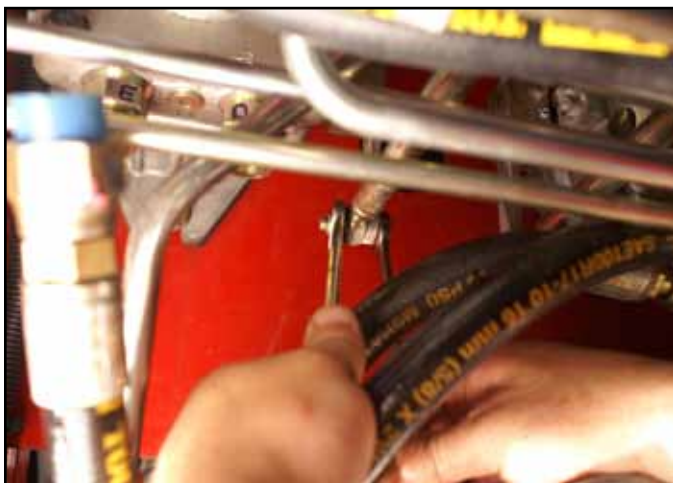


Fig 1428

PICT-4618

18. Support the hood and remove the prop rod (Fig. 1430).



Fig 1430

Belt 003

DRIVE SYSTEM

19. Using a 1/2" wrench, remove the 2 lower heat shield screws (Fig. 1431).



Fig 1431

Belt 002

21. Remove the heat shield (Fig. 1433).



Fig 1433

Belt 005

20. Using a 3/16" Allen wrench, remove the 2 upper heat shield screws (Fig. 1432).



Fig 1432

Belt 004

22. Using a spring tool, remove the idler spring from its post (Fig. 1434).



Fig 1434

Belt 007

DRIVE SYSTEM

23. Remove the belt from the right and left hydraulic traction pump pulleys (Fig. 1435).



Fig 1435

Belt 008

25. Install a pulley puller (Toro p/n: 112-2557) onto the left hand hydrostatic pump pulley (Fig. 1437).

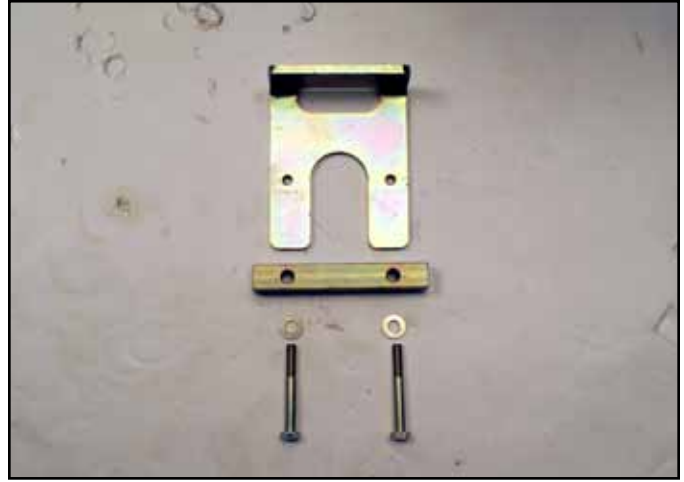


Fig 1437

PICT-4593a

24. Secure the pulley. Using a 5/8" socket, remove the center nut and washer retaining the pulley to the left hand hydrostatic pump shaft (Fig. 1436).



Fig 1436

PICT-4592

26. Remove the left hand pulley from the hydrostatic pump shaft (Fig. 1438).



Fig 1438

PICT-4596

DRIVE SYSTEM

27. Remove the key from the hydrostatic pump shaft keyway (Fig. 1439).



Fig 1439

PICT-4598

29. Remove the left hand hydrostatic pump from the tower frame (Fig. 1441).



Fig 1441

PICT-4627

28. Using a 3/4" socket and wrench, remove the top bolt and nut securing the left hand hydrostatic pump to the tower frame. Loosen the lower nut and bolt (Fig. 1440).



Fig 1440

PICT-4619

30. If replacing the pump, transfer all markings and fittings to the new pump (Fig. 1442).

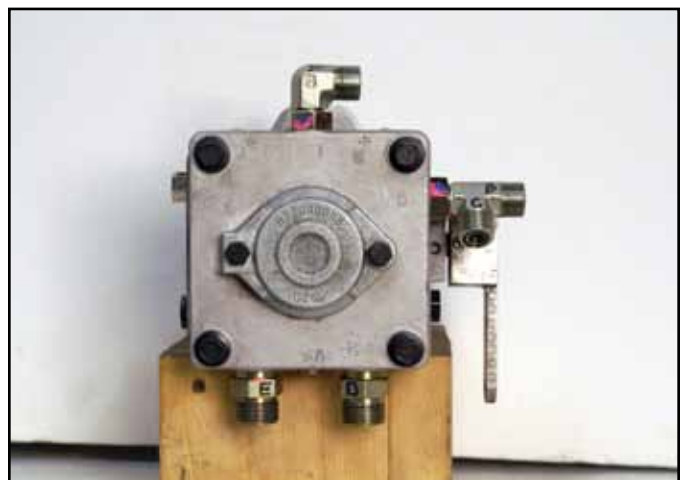


Fig 1442

PICT-4626a

31. If repairing/rebuilding the pump, refer to the Hydro-Gear BDP-10A/16A/21L Hydrostatic Pumps Service and Repair Manual (Toro Form No. 492-4789).

DRIVE SYSTEM

Left Hydrostatic Pump Installation

1. With the lower bolt and nut loosely installed in the tower frame, position the left hand hydrostatic pump so the pump shaft is inserted through the frame (Fig. 1443).



Fig 1443

PICT-4627

3. Install a key into the hydrostatic pump shaft keyway (Fig. 1445).



Fig 1445

PICT-4598

2. Using a 3/4" socket and wrench, install the top bolt and nut. Tighten the lower bolt and nut securing the left hand hydrostatic pump to the tower frame (Fig. 1444).



Fig 1444

PICT-4619

4. The pulley has a tapered through hole and a thicker flange on one side (Fig. 1446).



Fig 1446

PICT-4659

DRIVE SYSTEM

5. Slide the left hand pulley onto the hydrostatic pump shaft with the thicker flange side facing toward the pump (Fig. 1447).



Fig 1447

PICT-4632

7. Install a nut to secure the pulley to the left hand hydrostatic pump shaft (Fig. 1449).



Fig 1449

PICT-4634

6. Slide a washer onto the pump shaft (Fig. 1448).



Fig 1448

PICT-4633

8. Torque the nut to 260 ± 40 in-lbs. (29.38 ± 4.5 Nm) (Fig. 1450).



Fig 1450

PICT-4635

DRIVE SYSTEM

9. Route the belt around the engine pulley and the right and left hydrostatic pump pulleys (rear view) (Fig. 1451).

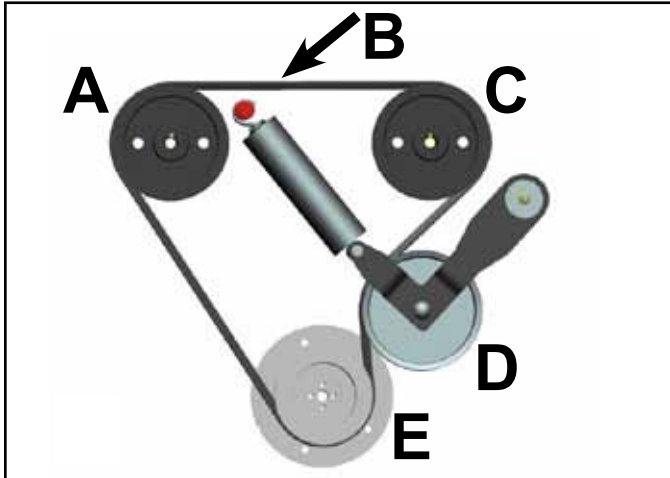


Fig 1451

TX525 belt routing

- A. LH pump pulley
B. Drive belt
C. RH pump pulley

- D. Idler pulley
E. Engine pulley

10. Using a spring tool, install the idler spring onto its post (Fig. 1452).



Fig 1452

Belt 007

11. Position the heat shield (Fig. 1453).



Fig 1453

Belt 005

12. Using a 3/16" Allen wrench, install the 2 upper heat shield screws (Fig. 1454).



Fig 1454

Belt 004

DRIVE SYSTEM

13. Using a 1/2" wrench, install the 2 lower heat shield screws (Fig. 1455).



Fig 1455

Belt 002

15. Install the hairpin cotter (Fig. 1457).



Fig 1457

Belt 001

14. Support the hood and install the prop rod (Fig. 1456).



Fig 1456

Belt 003

16. Using a 1-1/8" wrench, install the left hand hydrostatic pump lines as follows:
G. Hydraulic hose coming from the upper port on the left hand wheel motor (Fig. 1458).



Fig 1458

PICT-4623

DRIVE SYSTEM

- F. Hydraulic hose coming from the lower port on the left hand wheel motor (Fig. 1459).



Fig 1459

PICT-4621

- D. Hydraulic hose coming from the lower port on the right hand wheel motor (Fig. 1461).

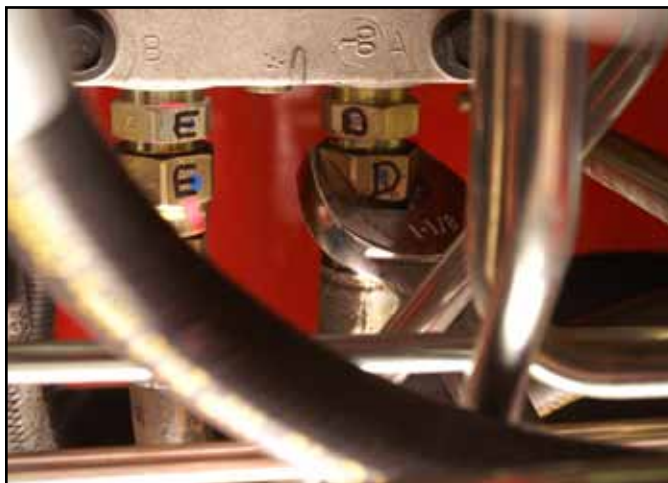


Fig 1461

PICT-4615

- E. Hydraulic hose coming from the upper port on the right hand wheel motor (Fig. 1460).



Fig 1460

PICT-4616

17. Using a 15/16" wrench, connect the left hand hydrostatic pump lines as follows:
C. Case drain line returning to the hydraulic oil tank (Fig. 1462).



Fig 1462

PICT-4614

DRIVE SYSTEM

- B. Right pump case drain line (Fig. 1463).

Note: A 7/8" wrench may need to be used to hold the fitting while tightening the hydraulic line.



Fig 1463

PICT-4613

- A. Hydraulic oil inlet from the filter (Fig. 1464).



Fig 1464

PICT-4612

18. Position the right hand panel onto the control panel assembly (Fig. 1465).



Fig 1465

PICT-4269

19. Using a 3/8" socket, install 3 self-tapping screws that secure the right panel to the control panel assembly. Using a 3/8" socket and a 7/16" socket, install a bolt and nut securing the lower left corner of the right panel to the control panel assembly (Fig. 1466).

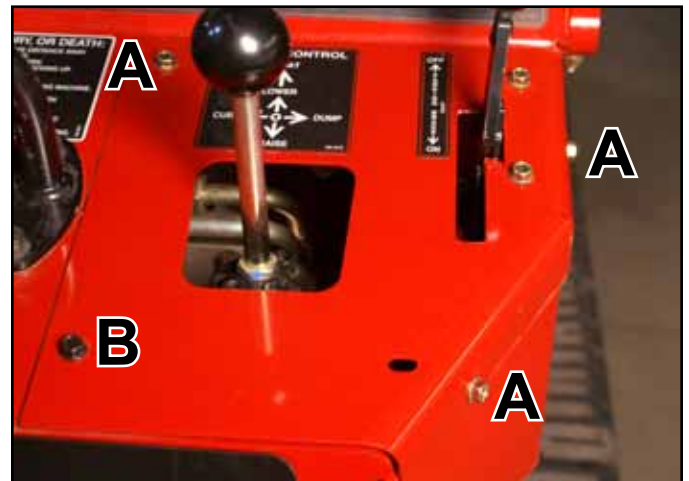


Fig 1466

PICT-4341

- A. Self-tapping screw (3) B. Bolt and nut

DRIVE SYSTEM

20. Position the left hand panel onto the control panel assembly (Fig. 1467).



Fig 1467

PICT-4601

21. Using a 3/8" socket, install 4 self-tapping screws securing the left hand panel to the control panel assembly (Fig. 1468).



Fig 1468

PICT-4600

22. Slide the 2 fuel lines onto the fuel tank fittings. Note the location markings (Fig. 1469).

S - Fuel suction line
R - Fuel return line

Note: Before installing the fuel tank into the unit, disengage the park brake and start the unit. Refer to "Purging Air Procedure", page 9-19, and check for any leaks in the hydraulic fittings and hydraulic hoses.



Fig 1469

PICT-4265

DRIVE SYSTEM

23. Position the 2 fuel hose clamps to secure the fuel lines to the fuel tank fittings (Fig. 1470).



Fig 1470

PICT-4264

25. Position the fuel tank bracket onto the fuel tank (Fig. 1472).



Fig 1472

PICT-5626

24. Position the fuel tank into the rear end of the frame. Connect the two wires (black and orange) to the fuel sending unit located on the top of the fuel tank (Fig. 1471).

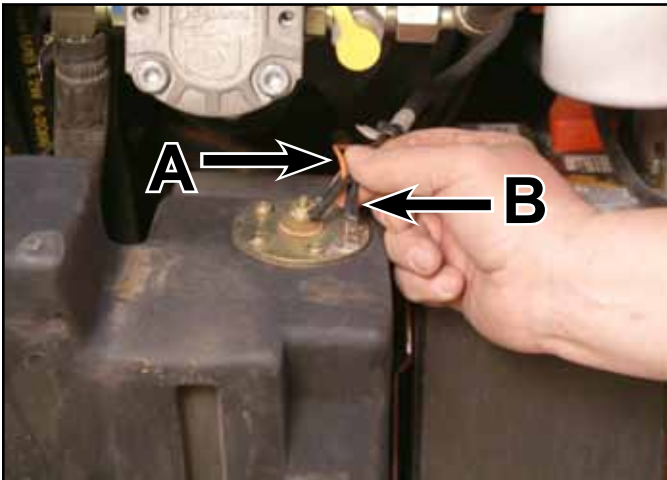


Fig 1471

PICT-4262

- A. Center terminal (orange wire)
B. Outside terminal (black wire)

26. Position the rear frame cover to the rear end of the frame. Using 3/4" and 1/2" sockets, install 7 bolts and nuts to secure the rear frame cover to the frame and fuel tank bracket (Fig. 1473).

Note: The rear of the machine may have to be lifted to reposition the jack stands so that the rear frame cover can be installed.

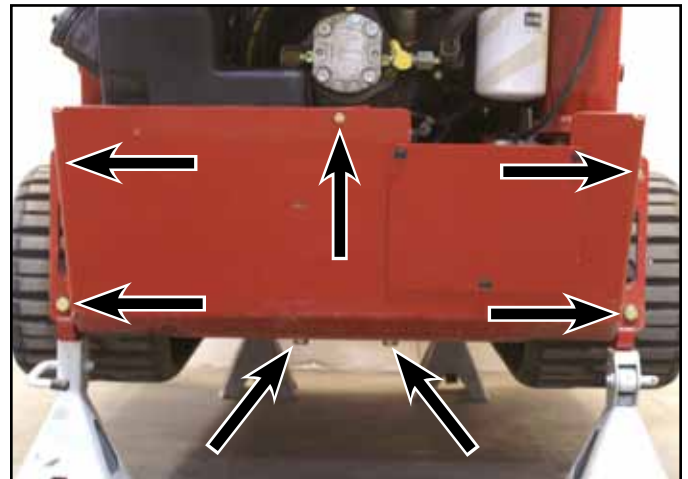


Fig 1473

PICT-4259

DRIVE SYSTEM

27. Position the left hand rear cover support panel to the tower. Using a 3/8" socket, install 3 screws to secure the left rear cover support panel to the tower assembly. Repeat to install right hand rear cover support panel (Fig. 1474).

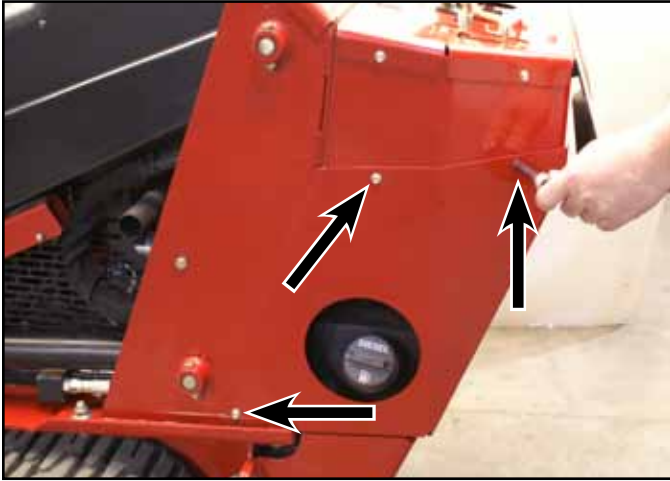


Fig 1474

PICT-4256

28. Install the rear access panel (Fig. 1475).



Fig 1475

PICT-4505

29. Lower the machine.
30. Lower the hood.

Wheel Motor Replacement

The following procedures can be followed for right or left wheel motor removal. When removing the right wheel motor, the battery has to be removed. Those steps are labeled "For right hand wheel motor removal only:" and "For right hand wheel motor installation only:" respectively.

Wheel Motor Removal

1. Lift the Machine. Refer to "Lifting the Machine for Service" on page 7-1.
2. Remove the track. Refer to "Wide Track Removal" on page 7-68, or "Narrow Track Removal" on page 7-72.
3. Set the parking brake.
4. Using a 1-3/4" socket, loosen the nut securing drive wheel to the wheel motor shaft. Leave the nut threaded onto the wheel motor shaft to retain the drive sprocket upon its removal (Fig. 1476).

Note: The nut securing the drive sprocket to the wheel motor shaft is a patch-lock nut and needs to be replaced when removed.



Fig 1476

PICT-4448

DRIVE SYSTEM

5. Using a wheel puller, break the drive sprocket free from the wheel motor shaft (Fig. 1477).



Fig 1477

PICT-4450

7. Remove the drive sprocket from the wheel motor shaft (Fig. 1479).



Fig 1479

PICT-4452

6. Remove the patch lock nut from the wheel motor shaft (Fig. 1478).



Fig 1478

PICT-4451

8. Remove the key from the wheel motor shaft keyway (Fig. 1480).



Fig 1480

PICT-4457

DRIVE SYSTEM

9. Remove the rear access panel (Fig. 1481).



Fig 1481

PICT-4505

11. Using 3/4" and 1/2" sockets, remove the 7 bolts and nuts securing the rear frame cover to the frame and fuel tank bracket (Fig. 1483).



Fig 1483

PICT-4456

10. Using a 3/8" socket, remove the 6 screws that secure the left and right rear cover support panel to the tower assembly. Remove the panel (Fig. 1482).

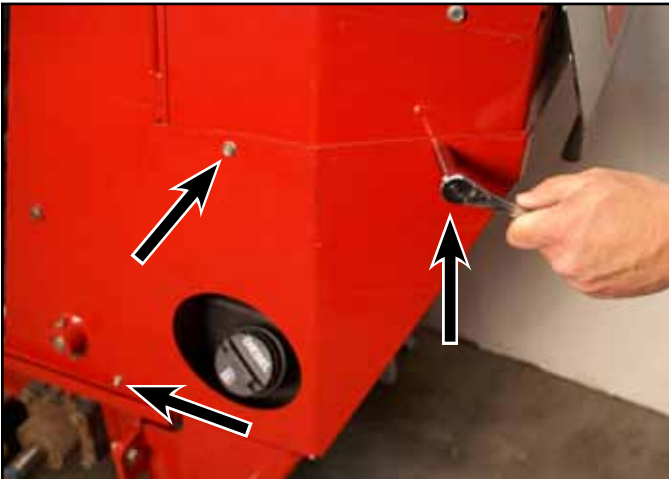


Fig 1482

PICT-4454

12. Remove the rear frame cover (Fig. 1484).

Note: The rear of the machine may have to be lifted to reposition the jack stands so that the rear frame cover can be removed.



Fig 1484

PICT-4458

DRIVE SYSTEM

13. Remove the fuel tank bracket (Fig. 1485).



Fig 1485

PICT-5626

14. Disconnect the two wires (black and orange) from the fuel sending unit located on the top of the fuel tank (Fig. 1486).



Fig 1486

PICT-4262a

15. Mark the suction fuel line and tank fitting with an "S" and the return fuel line and tank fitting with an "R" (Fig. 1487):
S - Fuel suction line
R - Fuel return line



Fig 1487

PICT-4263

16. Slide the 2 fuel hose clamps down the fuel line away from the fuel tank fittings (Fig. 1488).



Fig 1488

PICT-4264

DRIVE SYSTEM

17. Slide the 2 fuel lines off the fuel tank fittings. Remove the fuel tank. (Fig. 1489).



Fig 1489

PICT-4265

18. For right hand wheel motor removal only: Remove the bolt, washer and nut securing the battery clamp to the frame. Remove the battery clamp (Fig. 1490).



Fig 1490

PICT-4310a

19. For right hand wheel motor removal only: Slide the battery partially out of the battery mount. Disconnect the negative battery cable from the battery. Slide the battery out of the battery mount further to access the positive battery cable terminal. Disconnect the positive battery cable and remove the battery and battery guard from the battery mount (Fig. 1491).



Fig 1491

PICT-4312a

20. Before disconnecting the hydraulic lines from the wheel motor, mark or tag one of the hydraulic lines; this will ensure the hydraulic lines are reinstalled correctly (Fig. 1492).



Fig 1492

PICT-4459

DRIVE SYSTEM

21. Place a drain pan under the wheel motor that is being removed. Using a 1-1/8" 15°/60° offset open end wrench, disconnect the two hydraulic lines running to the wheel motor. Install protective caps on the hydraulic lines (Fig. 1493).



Fig 1493

PICT-4461

22. Using a 1-1/16" socket, remove the two hydraulic fittings from the wheel motor. Insert caps into the wheel motor ports (Fig. 1494).



Fig 1494

PICT-4463

23. Remove the 4 bolts, and lock washers retaining the wheel motor to the frame (Fig. 1495).



Fig 1495

PICT-4464

24. Remove the wheel motor mounting plate (Fig. 1496).



Fig 1496

PICT-4465

DRIVE SYSTEM

25. Rotate the wheel motor 90° so the ports are facing upward, this will allow the raised portion of the wheel motor to fit through the notch in the frame. Remove the wheel motor (Fig. 1497).



Fig 1497

PICT-4466

26. For wheel motor service, Refer to the Parker / Ross Wheel Motor Service Manual (Toro p/n: 492-4753).

Wheel Motor Installation

1. Insert the wheel motor into the frame with the ports facing up. After the wheel motor is inside the frame, rotate the wheel motor 90° clockwise so the hydraulic ports are facing to the rear (Fig. 1498).



Fig 1498

PICT-4471

2. Wheel motor mounting plates have a wide side and narrow side. The wide side faces up when installing the wheel motor (Fig. 1499).

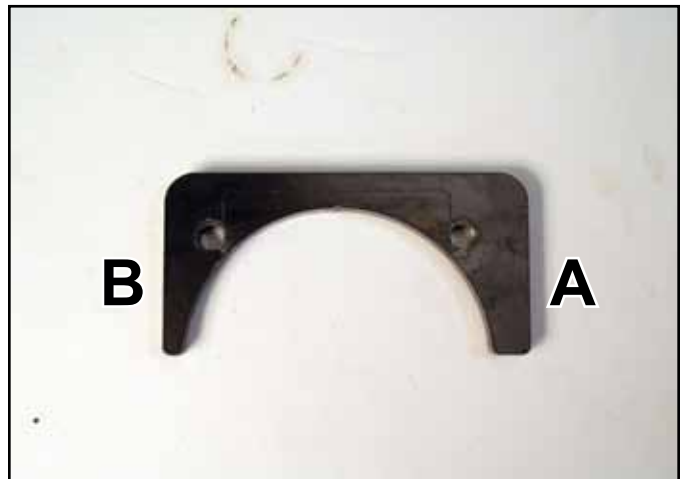


Fig 1499

PICT-4473a

A. Wide Side

B. Narrow Side

DRIVE SYSTEM

3. Position the wheel motor mounting plate on the inside of the frame with the wide side positioned toward the rear of the machine (Fig. 1500).



Fig 1500

PICT-4477

5. Install the 4 mounting bolts and lock washers through the wheel motor housing and frame. The top 2 mounting bolts will also thread into the mounting plate. Torque the 4 mounting bolts to 75 ± 8 ft-lbs. (102 ± 11 Nm) (Fig. 1502).



Fig 1502

PICT-4479

4. Apply a thread locking compound to the threads of the wheel motor mounting bolts (Fig. 1501).

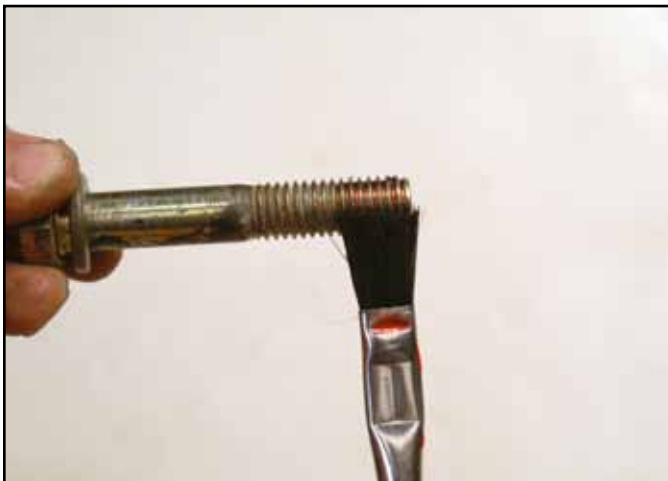


Fig 1501

PICT-4474a

6. Remove protective caps.
7. With a 1-1/16" socket, install the hydraulic fittings into the wheel motor (Fig. 1503).



Fig 1503

PICT-4463

DRIVE SYSTEM

8. Install the two hydraulic lines to the wheel motor using a 1-1/8" 15°/60° offset open end wrench (Fig. 1504).

Note: To ease installation, connect the bottom hydraulic line first.



Fig 1504

PICT-4461

9. For right hand wheel motor installation only: Slide the battery partially into the battery mount. Install the positive battery cable to the positive battery terminal. Slide the battery further into the battery mount. Install the negative battery cable to the negative battery terminal. Slide the battery guard in between the battery and the frame so that the hole in the guard lines up with the battery clamp mounting hole in the frame (Fig. 1505).



Fig 1505

PICT-4330

10. For right hand wheel motor installation only: Position the battery clamp into the slot on the battery mount and line up the mounting hole with the hole in the frame. Install a bolt, washer and nut to secure the battery clamp to the frame (Fig. 1506).



Fig 1506

PICT-4310a

DRIVE SYSTEM

11. Connect the fuel lines to the fuel tank fittings. Note the location markings. Secure the fuel lines with hose clamps (Fig. 1507).

S - Fuel suction line
R - Fuel return line

Note: Before installing the fuel tank in the unit, disengage the park brake and start the unit. Refer to “Purging Air Procedure” on page 9-19. Check for any leaks in the hydraulic fittings and hydraulic hoses.



Fig 1507

PICT-4265

12. Position the fuel tank into the rear end of the frame. Connect the two wires (black and orange) to the fuel sending unit located on the top of the fuel tank (Fig. 1508).

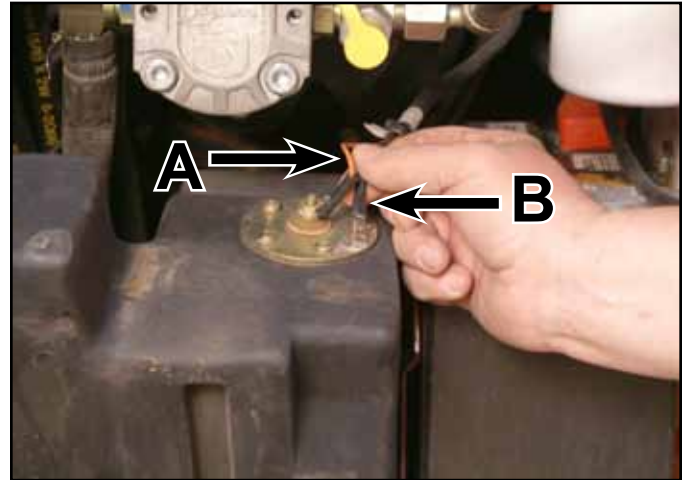


Fig 1508

PICT-4262a

- A. Center terminal (orange wire)
B. Outside terminal (black wire)

13. Position the fuel tank bracket onto the fuel tank (Fig. 1509).



Fig 1509

PICT-5626

DRIVE SYSTEM

14. Position the rear frame cover to the rear end of the frame. Using 3/4" and 1/2" sockets, install 7 bolts and nuts to secure the rear frame cover to the frame and fuel tank bracket (Fig. 1510).

Note: The rear of the machine may have to be lifted to reposition the jack stands so that the rear frame cover can be installed.



Fig 1510

PICT-4456

15. Position the left and right hand rear cover support panels to the tower. Using a 3/8" socket, install 3 screws each to secure the left and right rear cover support panels to the tower assembly. (Fig. 1511).



Fig 1511

PICT-4454

16. Install the rear access panel (Fig. 1512).



Fig 1512

PICT-4505

17. Insert the key into the wheel motor shaft keyway (Fig. 1513).



Fig 1513

PICT-4480

DRIVE SYSTEM

18. Slide the drive sprocket onto the wheel motor shaft (Fig. 1514).



Fig 1514

PICT-4452

20. With the parking brake on, torque the patch lock nut to $300 + 100/-0$ ft-lbs. ($406.7 + 135.5$ Nm) (Fig. 1516).



Fig 1516

PICT-4481

19. Thread a new patch lock nut onto the wheel motor shaft (Fig. 1515).



Fig 1515

PICT-4451

21. Install the track. Refer to "Wide Track Installation" on page 7-70, or "Narrow Track Installation" on page 7-73.

DRIVE SYSTEM

Track Replacement

Wide Track Removal

1. Lift the machine. Refer to "Lifting the Machine for Service" on page 7-1.
2. Stop the engine, and remove the key.
3. Set the parking brake to the ON position.
4. Remove the locking bolt, spacer and nut (Fig. 1517).



Fig 1517

PICT-4440

5. Using a 1/2" drive ratchet, release the drive tension by turning the tensioner bolt clockwise until the tensioning nut contacts the tensioner bolt head. Push the tension wheel toward the rear of the unit (Fig. 1518).



Fig 1518

PICT-4441

7. Using a 1-1/2" socket, remove the nut securing the outer tension wheel (Fig. 1519).



Fig 1519

PICT-4442

DRIVE SYSTEM

8. Remove the outer washer, tensioner wheel and inner washer (Fig. 1520).



Fig 1520

PICT-4443

10. Remove the track from the rear drive sprocket (Fig. 1522).



Fig 1522

PICT-4447

9. Remove the track from the front tensioner wheel (Fig. 1521).



Fig 1521

PICT-4446

DRIVE SYSTEM

Wide Track Installation

Important: Before installing the track, use the **Alignment Tool, Toro P/N 110-0069**, for proper alignment between the drive sprocket and the front tensioner wheel. Refer to “Track Guide Alignment” on page 7-3.

1. Install the track, ensuring that the lugs in the track fit between the spacers in the middle of the drive sprocket (Fig. 1523).



Fig 1523

PICT-4495

2. Install the track over the inside tensioner wheel (Fig. 1524).



Fig 1524

PICT-4496

3. Ensure old grease and dirt are cleaned out of the area between the two washers and the bearings on the outside tensioner wheel. Fill the area on one side of the wheel with grease (Fig. 1525).



Fig 1525

PICT-4497

4. Install the large washer onto the wheel over the grease (Fig. 1526).



Fig 1526

PICT-4498

DRIVE SYSTEM

5. Slide the outer tensioner wheel onto the tensioner wheel shaft with the installed washer side going on first (Fig. 1527).



Fig 1527

PICT-4499

7. Slide the second washer over the tensioner wheel shaft and into the wheel over the grease (Fig. 1529).



Fig 1529

PICT-4501

6. Apply grease to the bearing area on the outside of the tensioner wheel (Fig. 1528).



Fig 1528

PICT-4500

8. Using a 1-1/2" socket, install a nut securing the tensioner wheel. Torque the nut to 300 ft-lbs. (407 Nm) (Fig. 1530).



Fig 1530

PICT-4502

DRIVE SYSTEM

9. Turn the tensioning screw counter-clockwise until the distance between the tension nut and the back of the tension arm is 2-3/4" (7cm) (Fig. 1531).

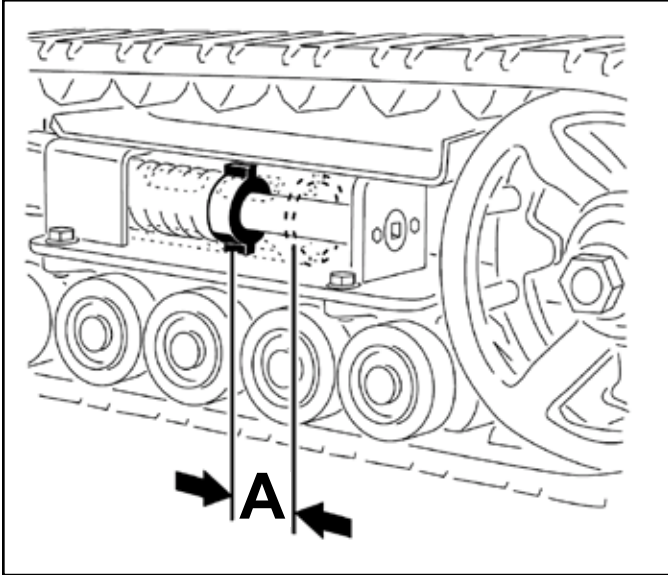


Fig 1531

fig. 33 m-4775

A. 2-3/4" (7cm)

10. Align the closest notch in the tension screw to the locking bolt hole and secure the screw with the locking bolt, spacer and nut (Fig. 1532).



Fig 1532

PICT-4440

11. Lower the traction unit to the ground.

Narrow Track Removal

1. Lift the machine. Refer to "Lifting the Machine for Service" on page 7-1.
2. Raise the loader arms approximately 12" (30.48cm).
3. Stop the engine and remove the key.
4. Using a 7/16" socket and wrench, remove the locking bolt and nut (Fig. 1533).



Fig 1533

PICT-5340

5. Using a 1/2 inch drive ratchet, release the drive tension by turning the tensioning screw clockwise (Fig. 1534).



Fig 1534

PICT-5341

DRIVE SYSTEM

6. Push the tension wheel toward the rear of the unit to move the tension arm against the frame (Fig. 1535). (If it does not touch the frame, continue turning the tensioning screw until it does.)



Fig 1535

PICT-5342

8. When the track is off of the tension wheel, remove it from the road wheel and drive sprocket (Fig. 1537).



Fig 1537

PICT-5346

7. Begin removing the track at the top of the tension wheel, prying it off of the wheel while rotating the track forwards (Fig. 1536).



Fig 1536

PICT-5344

Narrow Track Installation

Important: Before installing the track, use the **Alignment Tool Toro P/N 110-0069** for proper alignment between the drive sprocket and the front tension wheel. Refer to "Track Guide Alignment" on page 7-3.

1. Beginning at the drive sprocket, coil the track around the sprocket, ensuring that the lugs on the track fit between the spacers on the sprocket (Fig. 1538).



Fig 1538

PICT-5345

DRIVE SYSTEM

2. Push the track under and between the road wheels. Starting at the bottom of the tension wheel, install the track around the wheel by rotating the track rearward while pushing the lugs into the wheel (Fig. 1539).



Fig 1539

PICT-5358

4. Align the closest notch in the tension screw to the locking bolt hole and secure the screw with the locking bolt and nut (Fig. 1541).



Fig 1541

PICT-5340

3. Turn the tensioning screw counter-clockwise until the distance between the tension nut and the back of the tension arm is 2-3/4" (7cm) (Fig. 1540).

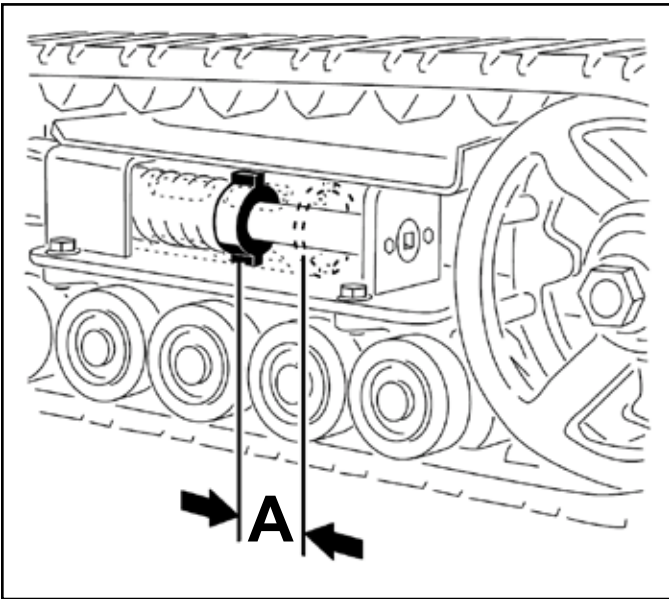


Fig 1540

fig. 37 G004201

A. 2-3/4" (7cm)

5. Lower the traction unit to the ground.

Track Guide Replacement

Track Guide Removal

1. Lift the machine, refer to “Lifting the Machine for Service” on page 7-1.
2. Remove the track. Refer to “Wide Track Removal” on page 7-68, or “Narrow Track Removal” on page 7-72.
3. Raise the loader arm approximately 12” (30cm). Secure the loader arms.
4. Slide the tensioner arm out of the mainframe (Fig. 1542).
5. Install a hydraulic floor jack and a suitable board under the track guide for support (Fig. 1543).



Fig 1542

PICT-4520



Fig 1543

PICT-4521

6. Using a 3/4” socket, remove the 4 bolts and lock washers holding the track guide to the mainframe (Fig. 1544).



Fig 1544

PICT-4522

DRIVE SYSTEM

7. Using the floor jack, lower the track guide from the frame (Fig. 1545).



Fig 1545

PICT-4523

Note: The track guide end with the step, is mounted toward the drive sprocket (Fig. 1547).



Fig 1547

PICT-4545

Track Guide Installation

1. Place a suitable board onto a hydraulic floor jack. Place the track guide on top of the floor jack.
2. Position the track guide to the frame (Fig. 1546).
3. Using a 3/4" socket, loosely install 4 bolts and lock washers to secure the track guide to the mainframe (Fig. 1548).



Fig 1546

PICT-4523



Fig 1548

PICT-4522

4. Remove the hydraulic jack and board.
5. Raise the loader arm approximately 12" (30cm). Secure the loader arms.
6. Slide the tensioner arm into the mainframe (Fig. 1549).



Fig 1549

PICT-4520

7. Align the track guide. Refer to "Track Guide Alignment" on page 7-3.
8. Install the track. Refer to "Wide Track Installation" on page 7-70, or "Narrow Track Installation" on page 7-73.

Road Wheel Replacement

For inner road wheel replacement: To replace the inner road wheels, the track guide assembly must be removed from the machine. Refer to "Track Guide Removal" on page 7-75.

For this procedure, the track guide has been removed from the machine for photo purposes.

Road Wheel Removal

1. Remove the snap ring securing the wheel bearing cap to the road wheel (Fig. 1550).



Fig 1550

PICT-4524

DRIVE SYSTEM

2. Remove the wheel bearing cap (Fig. 1551).



Fig 1551

PICT-4525

4. Remove the road wheel bolt (Fig. 1553).



Fig 1553

PICT-4527

3. Remove the bogie gasket (Fig. 1552).



Fig 1552

PICT-4526

5. Slide the road wheel off the track guide (Fig. 1554).



Fig 1554

PICT-4529

Road Wheel Rebuild

1. Secure the road wheel assembly in a vise.
2. Drive the road wheel bearing out of the road wheel (Fig. 1555).



Fig 1555

PICT-4530a

3. Turn the road wheel over in the vise and drive the grease seal out of the road wheel (Fig. 1556).



Fig 1556

PICT-4532a

4. Clean the road wheel of all debris. Inspect and replace if damaged.

Road Wheel Assembly (Fig. 1557)



Fig 1557

PICT-4534a

- | | |
|----------------|-------------------|
| A. Grease seal | E. Bogie Gasket |
| B. Road wheel | F. Cap |
| C. Bearing | G. Retaining ring |
| D. Bolt | |

5. Press a new grease seal into the road wheel (Fig. 1558).



Fig 1558

PICT-4536a

DRIVE SYSTEM

6. Press a new bearing into the road wheel so that the bearing shoulder is facing the grease seal (Fig. 1559).



Fig 1559

PICT-4535a

7. Apply grease to the grease seal lip (Fig. 1560).

Important: Take care that no grease gets on the inside diameter of the road wheel bearing.



Fig 1560

PICT-4537

Road Wheel Installation

1. Clean the track guide of all debris.
2. Slide the road wheel onto the track guide (Fig. 1561).



Fig 1561

PICT-4529

3. Apply thread locking compound to the road wheel bolt (Fig. 1562).



Fig 1562

PICT-4539a

DRIVE SYSTEM

4. Install the road wheel bolt (Fig. 1563).



Fig 1563

PICT-4527

6. Install the bogie gasket over the bolt head, inside the outer cap ring of the road wheel (Fig. 1565).



Fig 1565

PICT-4526

5. Torque the road wheel bolt to 150 ± 15 ft-lbs. (203 ± 20 Nm) (Fig. 1564).



Fig 1564

PICT-4540a

7. Apply grease to the cavity in the road wheel bearing cap (Fig. 1566).



Fig 1566

PICT-4542a

DRIVE SYSTEM

8. Install the road wheel bearing cap (Fig. 1567).



Fig 1567

PICT-4525

9. Install the snap ring securing the wheel bearing cap to the road wheel so that the flat side of the snap ring is facing away from the road wheel (Fig. 1568).



Fig 1568

PICT-4524

Tensioner Arm Replacement - Wide Track

Tensioner Arm Removal - Wide Track

1. Lift the machine, refer to "Lifting the Machine for Service" on page 7-1.
2. Remove the Track. Refer to "Wide Track Removal" on page 7-68.
3. Raise the loader arms approximately 12" (7cm).
4. Slide the tensioner arm assembly out of the mainframe (Fig. 1569).



Fig 1569

PICT-4568

DRIVE SYSTEM

5. Remove the spring from the tensioner arm (Fig. 1570).



Fig 1570

PICT-4569

6. Remove the tensioner bolt and tensioner block from the mainframe (Fig. 1571).



Fig 1571

PICT-4570

Tensioner Arm Rebuild - Wide Track

1. Rotate the tensioner arm so the bottom of the tensioner arm is facing up and slide it back into the mainframe so that the square portion of the tensioner arm is inserted into the mainframe (Fig. 1572).



Fig 1572

PICT-4571

2. Using a 1-1/2" socket, remove the nut securing tensioner wheel to the tensioner arm shaft (Fig. 1573).



Fig 1573

PICT-4572

DRIVE SYSTEM

3. Remove the outer washer from the tensioner wheel (Fig. 1574).



Fig 1574

PICT-4574

5. Remove the inner washer from the tensioner wheel (Fig. 1576).



Fig 1576

PICT-4576

4. Remove the tensioner wheel from the tensioner arm shaft (Fig. 1575).



Fig 1575

PICT-4575

6. Slide the tensioner arm out of the mainframe (Fig. 1577).



Fig 1577

PICT-4577

DRIVE SYSTEM

Tensioner Arm and Wheel Assembly (Fig. 1578 and Fig. 1579)

Welded, non-replaceable style (serial #270000001 - 270999999):

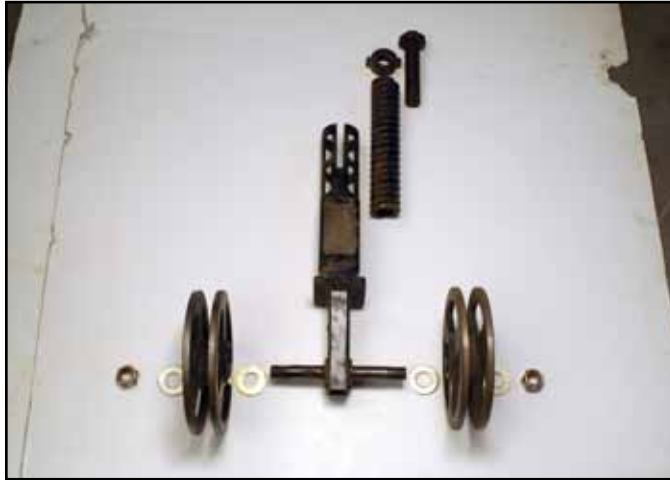


Fig 1578

PICT-4566a

7. Secure the tensioner arm into a vise with the bottom side facing up.
8. Drive the roll pin out of the shaft end of the tensioner arm (Fig. 1580).



Fig 1580

PICT-4549a

Cast, replaceable style (serial #280000001 & up):



Fig 1579

PICT-4567a

9. Press the tensioner arm shaft out of the tensioner arm (Fig. 1581).



Fig 1581

PICT-4550

DRIVE SYSTEM

10. Make an alignment marking on the tensioner arm through hole and tensioner arm shaft roll pin slot (Fig. 1582):
- A. Place a mark on the tensioner arm shaft dividing the roll pin slot in half
 - B. Place a mark on the tensioner arm through-hole (non-shoulder side) dividing the through-hole in half.

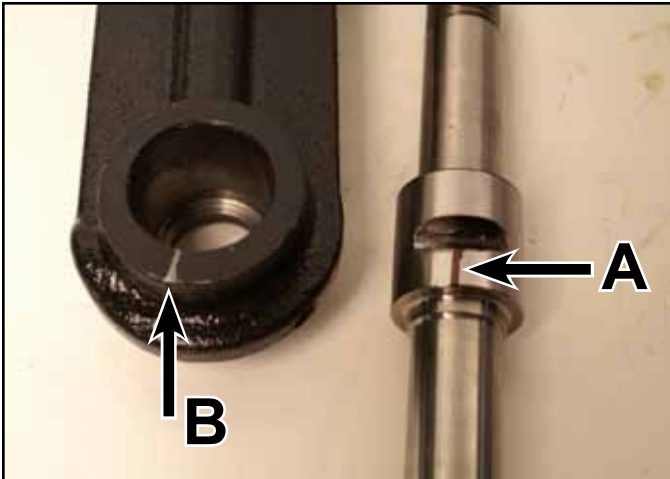


Fig 1582

PICT-4557

11. Insert the tensioner arm shaft into the tensioner arm through-hole observing alignment marks (Fig. 1583):
- A. The thicker shoulder on shaft matches up with wider shoulder on tensioner arm.
 - B. Align the center of the shaft roll pin groove with the center of the tensioner arm through-hole.

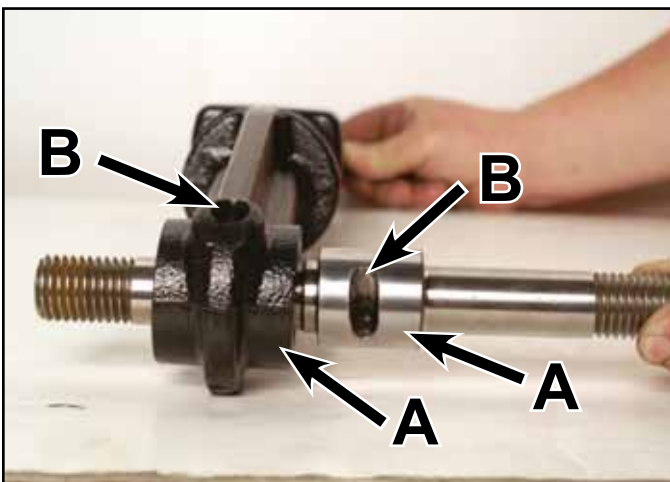


Fig 1583

PICT-4556a

12. Press the tensioner arm shaft into the tensioner arm ensuring the center of the shaft roll pin groove aligns with the center of the tensioner arm through-hole (Fig. 1584).



Fig 1584

PICT-4561

13. Secure the tension arm in a vise with the bottom side facing up.

14. Drive the roll pin into the tensioner arm (Fig. 1585).



Fig 1585

PICT-4563a

DRIVE SYSTEM

Tensioner Arm Installation - Wide Track

1. With the bottom side facing up, slide the tensioner arm far enough into the mainframe so that the squared portion of the tensioner arm is inserted into the mainframe (Fig. 1586).



Fig 1586

PICT-4578

2. Apply grease to the inside of the tensioner wheel bore (Fig. 1587).



Fig 1587

PICT-4497

3. Place a washer into the greased wheel bore (Fig. 1588).



Fig 1588

PICT-4498

4. Slide the tensioner wheel, washer side facing in, onto the tensioner arm shaft (Fig. 1589).



Fig 1589

PICT-4579

DRIVE SYSTEM

5. Apply grease to the inside of the tensioner wheel bore (Fig. 1590).



Fig 1590

PICT-4580

7. Using a 1-1/2" socket, install a nut securing the tensioner wheel to the tensioner arm shaft. Torque the nut to 300 ft-lbs. (407 Nm) (Fig. 1592).



Fig 1592

PICT-4583

6. Place a washer into the greased wheel bore (Fig. 1591).



Fig 1591

PICT-4581

8. Slide the tensioner arm assembly out of the main-frame (Fig. 1593).



Fig 1593

PICT-4584

DRIVE SYSTEM

9. Slide the tensioner spring into the tensioner arm (Fig. 1594).



Fig 1594

PICT-4585

11. Rotate the tensioner arm so the top is facing up for proper installation and slide it back into the main-frame (Fig. 1596).



Fig 1596

PICT-4590

10. Slide the tensioner bolt and nut into the tensioner arm (Fig. 1595).



Fig 1595

PICT-4587

12. Install the track. Refer to "Wide Track Installation" on page 7-70.

13. Lower the loader arm.

14. Lower the machine to the ground.

DRIVE SYSTEM

Tensioner Arm Wheel Bearing Replacement - Wide Track

Tensioner Arm Wheel Bearing Removal - Wide Track

1. Lift the machine. Refer to "Lifting the Machine for Service" on page 7-1.
2. Set the parking brake to the ON position.
3. Remove the locking bolt, spacer and nut (Fig. 1597).



Fig 1597

PICT-4440

4. Using a 1/2" drive ratchet, release the drive tension by turning the tensioner screw clockwise until the tensioning nut contacts the tensioner bolt head. Push the tension wheel toward the rear of the unit (Fig. 1598).



Fig 1598

PICT-4441

To replace the wheel bearing on the outer tensioner wheel continue on. To replace the wheel bearing on the inner tension wheel, go to step 12.

Outer tensioner wheel bearing removal:

5. Remove the nut securing the outer tensioner wheel (Fig. 1599).



Fig 1599

PICT-4442

DRIVE SYSTEM

6. Remove the outer washer, tensioner wheel and inner washer (Fig. 1600).



Fig 1600

PICT-4443

9. Turn the wheel over and drive the second bearing out using a punch and hammer (Fig. 1602).



Fig 1602

PICT-4513a

7. Secure the tensioner wheel in a vise.
8. Drive one of the bearings out using a punch and hammer (Fig. 1601).



Fig 1601

PICT-4510a

DRIVE SYSTEM

10. Clean the tensioner arm wheel of all grease and debris. Replaced if damaged or worn.

Inner tensioner wheel bearing removal:

11. Raise the loader arm approximately 12" (30.48cm).
12. Remove the track. Refer to "Wide Track Removal" on page 7-68.
13. Rotate the tensioner arm so the bottom of the tensioner arm is facing up and slide it back into the mainframe so that the square portion of the tensioner arm is inserted into the mainframe (Fig. 1603).



Fig 1603

PICT-4571

14. Using a 1-1/2" socket, remove the nut securing the inner tensioner wheel to the tensioner arm shaft (Fig. 1604).



Fig 1604

PICT-4572

15. Remove the outer washer from the tensioner wheel (Fig. 1605).



Fig 1605

PICT-4574

DRIVE SYSTEM

16. Remove the tensioner wheel from the tensioner arm shaft (Fig. 1606).



Fig 1606

PICT-4575

18. Position the tensioner wheel in a vise to secure.

19. Drive one of the bearings out using a punch and hammer (Fig. 1608).



Fig 1608

PICT-4510a

17. Remove the inner washer from the tensioner wheel or tensioner arm shaft (Fig. 1607).



Fig 1607

PICT-4576

20. Turn the wheel over and drive the second bearing out using a punch and hammer (Fig. 1609).



Fig 1609

PICT-4513a

21. Clean the tensioner arm wheel of all grease and debris. Replaced if damaged or worn.

DRIVE SYSTEM

Tensioner Arm Wheel Bearing Installation - Wide Track

Tension Arm Wheel and Bearings (Fig. 1610):



Fig 1610

PICT-4517a

1. Install the tensioner arm wheel into a vise to secure.
2. Press a bearing into the wheel bore with the longer flange of the bearing facing inward (Fig. 1611).



Fig 1611

PICT-4518a

3. Turn the wheel over in the vise. Drive a second bearing into the wheel bore with the longer flange of the bearing facing inward (Fig. 1612).



Fig 1612

PICT-4519

To install the inner tensioner wheel, continue on. To install the outer tensioner wheel, go to step 16.

4. The loader arms should be to be raised approximately 12" (30.4cm).
5. With the bottom side facing up, slide the tensioner arm far enough into the mainframe so that the squared portion of the tensioner arm is inserted into the mainframe (Fig. 1613).



Fig 1613

PICT-4578

DRIVE SYSTEM

6. Apply grease to the inside of the tensioner wheel bore (Fig. 1614).



Fig 1614

PICT-4497

8. Slide the tensioner wheel onto the tensioner arm shaft (Fig. 1616).



Fig 1616

PICT-4579

7. Place a washer into the greased wheel bore (Fig. 1615).



Fig 1615

PICT-4498

9. Apply grease to the inside of the tensioner wheel bore (Fig. 1617).



Fig 1617

PICT-4580

DRIVE SYSTEM

10. Place a washer into the greased wheel bore (Fig. 1618).



Fig 1618

PICT-4581

12. Slide the tensioner arm assembly out of the main-frame (Fig. 1620).



Fig 1620

PICT-4584

11. Using a 1-1/2" socket, install a nut securing the tensioner wheel to the tensioner arm shaft. Torque the nut to 300 ft-lbs. (407 Nm) (Fig. 1619).



Fig 1619

PICT-4583

13. Slide the tensioner spring into the tensioner arm (Fig. 1621).



Fig 1621

PICT-4585

14. Slide the tensioner bolt and nut into the tensioner arm (Fig. 1622).



Fig 1622

PICT-4587

15. Rotate the tensioner arm so the top is facing up for proper installation and slide it back into the main-frame (Fig. 1623).



Fig 1623

PICT-4590

16. Install the track. Refer to "Wide Track Installation" on page 7-70.
17. Lower the loader arm.

Tensioner Wheel Bearing Replacement - Narrow Track

Tensioner Wheel Bearing Removal - Narrow Track

1. Raise the machine. Refer to "Lifting the Machine for Service" on page 7-1.
2. Raise the loader arm.
3. Remove the track. Refer to "Narrow Track Removal" on page 7-72.
4. Slide the tensioner arm out to access the bolt head on the inner side of the tensioner wheel. Using a 1" socket and wrench, remove the tensioner wheel axle bolt, washers and nut (Fig. 1624).



Fig 1624

PICT-5347

DRIVE SYSTEM

5. Remove the tensioner wheel from the tensioner arm (Fig. 1625).



Fig 1625

PICT-5348

6. Support the tensioner wheel so there is a space under it for bearing removal. Using a hammer, drive the upper bearing down to create a gap between spacer and bearing, then use a drift punch to hammer the lower bearing out. The spacer will fall out when the bearing is removed. Turn the tensioner wheel over and drive out the other bearing. Inspect the tensioner wheel housing and spacer (Fig. 1627).



Fig 1627

CLR DSC-0808

Tensioner Wheel Assembly (Fig. 1626):

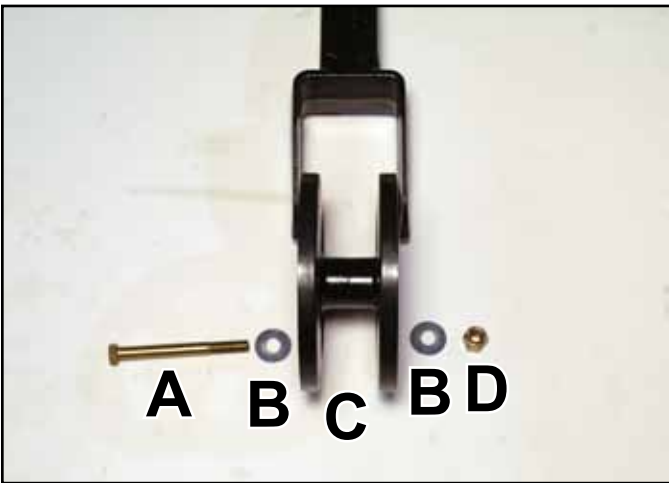


Fig 1626

PICT-5354a

- | | |
|---------------|--------------------|
| A. Bolt | C. Tensioner wheel |
| B. Washer (2) | D. Nut |

Tensioner Wheel Bearing Installation - Narrow Track

Note: The raised inner race of the bearing should be facing outward on both bearings on the tensioner wheel (Fig. 1628).



Fig 1628

CLR DSC-0810

1. Press the first bearing in so the outer bearing race is flush with the center hub.
2. Turn the tensioner wheel over and install the spacer centered on the inner race (tensioner wheel bolt can be used to keep the spacer centered to the bearing inner race) and press the second bearing in until the spacer is captured between the bearings.

Important: Press on outer bearing race only, otherwise bearing damage could occur.

Note: The outer race of each bearing is flush with the center hub of the tensioner wheel (Fig. 1629).



Fig 1629

CLR DSC-0811

DRIVE SYSTEM

3. Reassemble the tensioner wheel to the tension arm.

Tensioner Wheel Assembly (Fig. 1630):

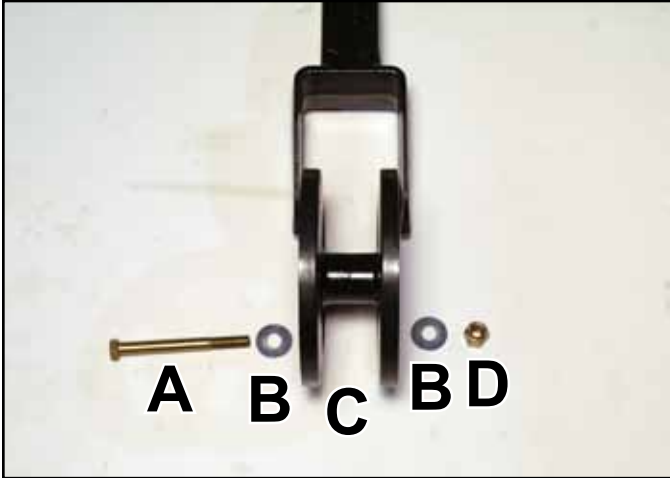


Fig 1630

PICT-5354a

- | | |
|---------------|--------------------|
| A. Bolt | C. Tensioner wheel |
| B. Washer (2) | D. Nut |

4. Insert the tensioner wheel axle bolt through the inside of the tensioner wheel arm. Slide a greased washer onto the axle bolt (Fig. 1631).



Fig 1631

PICT-5349

5. Position the tensioner wheel and slide the axle bolt partially through the wheel (Fig. 1632).



Fig 1632

PICT-5350

6. Position a greased washer between the tensioner wheel and the tension arm and continue sliding the axle bolt through (Fig. 1633).



Fig 1633

PICT-5352

7. Install a nut onto the tensioner wheel axle bolt.
Torque to 150 ± 15 ft-lbs. (203 ± 20 Nm) (Fig. 1634).



Fig 1634

PICT-5356

8. Install the track. Refer to “Narrow Track Installation” on page 7-73.
9. Lower the loader arm.

DRIVE SYSTEM

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